Revision of Leucophoropterini:

Diagnoses, Key to Genera, Description of the Australian Fauna, and Descriptions of New Indo-Pacific Genera and Species (Insecta: Hemiptera: Miridae)

Katrina L. Menard and Randall T. Schuh

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REVISION OF LEUCOPHOROPTERINI: DIAGNOSES, KEY TO GENERA, REDESCRIPTION OF THE AUSTRALIAN FAUNA, AND DESCRIPTIONS OF NEW INDO-PACIFIC GENERA AND SPECIES (INSECTA: HEMIPTERA: MIRIDAE)

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ABSTRACT

The Leucophoropterini (Miridae: Phylinae) is an Indo-Australian group including 23 genera and 104 species. Diagnoses are provided for all genera of Leucophoropterini. All genera and species of Australian fauna are revised and redescribed to complement earlier detailed study of Schuh for the Indo-Pacific fauna. Additional new taxa from Papua New Guinea are described and a key to the currently recognized genera is provided, as are keys to the species of *Ausejanus,* n. gen., and *Blesingia* Carvalho and Gross. Previously described genera include: *Abuyogocoris* Schuh (4 species), *Aitkenia* Carvalho and Gross (2 species, 1 described as new), *Arafuramiris* Schuh (7 species, 3 described as new), *Biromiris* Schuh (6 species, 3 described as new), *Blesingia* Carvalho and Gross (7 species, 5 as new combinations), *Collessicoris* Carvalho and Gross (1 species), *Ctypomiris* Schuh (3 species, 1 described as new), *Gulacapsus* Schuh (4 species, 1 described as new), *Leucophoroptera* Poppius (5 species, 2 described as new), *Papuamimus* Schuh (2 species), *Pseudohallodapocoris* Schuh (3 species), *Sejanus* Distant (29 species), *Solomonomimus* Schuh (1 species), *Trichocephalocapsus* Schuh (2 species), and *Waterhouseana* Carvalho (2 species, 1 described as new) are revised. New genera include: *Ausejanus* (18 species, 7 described as new and 11 as new combinations), *Austrodapus* (1 species, described as new), *Johnstonsonius* (1 species, described as new), *Missanos* (1 species, described as new), *Neaitkenia* (2 species, new combinations), *Neoleucophoroptera* (2 species, new combinations), *Papuamiroides* (1 species, described as new), and *Transleucophoroptera* (1 species, new combination). *Pseudoleucophoroptera* Schuh is synonymized with *Blesingia* Carvalho and Gross. The following species synonymies are created (junior synonyms first): *Sejanus brunneus* Carvalho and Gross = *Ausejanus tasmaniae* (Carvalho and Gross), *Sejanus intermedius* Carvalho and Gross = *Ausejanus albisignatus* (Knight), *Sejanus melaleucae* Carvalho and Gross = *Ausejanus mcdonaldi* (Carvalho and Gross), *Sejanus rosei* Carvalho and Gross = *Sejanus palumae* Carvalho and Gross, and *Leucophoroptera nitidior* Carvalho and Gross = *Blesingia elegans* Carvalho and Gross = *Blesingia latezonata* Carvalho and Gross = *Leucophoroptera quadrimaculata* Poppius. The genera *Dilatops* Weirauch, *Karoocapsus* Schuh, *Lasiolabops* Poppius, *Myrmicopsella* Poppius, *Porophoroptera* Carvalho and Gross, *Schuhistes* Menard, and *Tytthus* Fieber are removed from the Leucophoropterini. *Sejanus* species *S. biniguni* Schuh, *S. fasciatus* Carvalho and Gross, *S. fijiensis* Schuh, *S. hongkong* Schuh, *S. leai* Carvalho and Gross, *S. novecaledonicus* Schuh, *S. occidentalis* Carvalho and Gross, *S. ruber* Carvalho and Gross, *S. rubricatus* Carvalho and Gross, and *S. trivinosus* Carvalho and Gross are treated as incertae sedis.

INTRODUCTION

Recent collecting in Australia has produced large numbers of previously unknown or poorly known taxa. Several of these taxa belong to the Leucophoropterini, a relatively small tribe within the Phylinae, mostly endemic to the Indo-Pacific and Australia. The Leucophoropterini, like other Phylinae tribes such as the Hallodapini and Pilophorini, show a trend toward the evolution of body forms suggestive of ant mimicry (McGiver and Stonedahl, 1993). The study of this fascinating system within the Leucophoropterini, however, was initially encumbered by the need for a more robust diagnosis for the tribe, the lack of cohesive work addressing the taxon across its entire geographic range, and the absence of a taxonomy developed in a rigorous phylogenetic context. Studies of phylogenetic relationships within the subfamily Phylinae as a whole (Menard et al., in press) and of generic relationships within the Leucophoropterini across both Australia and the Indo-Pacific (Menard and Woolley, in press) have remedied the phylogenetic impediment. Both of those studies revealed needed taxonomic changes. The present work focuses almost excluvisely on issues of taxonomy.

The type genus, *Leucophoroptera* Poppius, 1914, was described from Australia with two included species, both represented by females only (*L. fasciatipennis* Poppius, 1914; *L. quadrimaculata* Poppius, 1914). Schuh (1974) defined the tribe based on the following characters: the presence of a transverse fascia across the anterior margin of the hemelytra; the relatively small pygophore relative to the abdomen; small, simple genitalia; and a trend toward ant-mimicking body forms. Genera initially assigned to the

tribe by Schuh (1974), in addition to *Leucophoroptera*, were *Myrmicopsella* Poppius (Madagascar), *Sejanus* Distant (Oriental, Palearctic), *Karoocapsus* Schuh (South Africa), and *Tytthus* Fieber (cosmopolitan). Carvalho and Gross (1982) then expanded the known fauna of Leucophoropterini by describing an additional four new genera and describing or transferring 37 species from Australia, all placed in the Leucophoropterini based on presumed possession, by authors Carvalho and Gross, of ant-mimetic characters. Several of the genera and species placed in the Leucophoropterini by Carvalho and Gross (1982) clearly do not share any of the synapomorphies proposed by Schuh (1974), particularly the relatively small genitalia, and appeared to belong to the Phylini or other tribes of Phylinae. Furthermore, several species were described on the basis of females, some were based on incomplete specimens, and in some cases separate sexes of the same species were described as distinct taxa (e.g., *Sejanus palumae*). These factors presented challenges in identifying the species and genera and in understanding the concept for Leucophoropterini as presented by Carvalho and Gross (1982).

The difficulties in addressing the Australian fauna of Leucophoropterini as treated by Carvalho and Gross (1982) became more apparent when studying specimens acquired as a result of intensive fieldwork by Randall Schuh and Gerasimos Cassis, part of it conducted during the NSF-funded Plant Bug Planetary Biodiversity Inventory (PBI), led by Schuh and Cassis as principle investigators. Several seasons of fieldwork across the continent yielded thousands of specimens of Phylinae, many of which appeared to represent species of Leucophoropterini described by Carvalho and Gross (1982). These collections included long series of both sexes of several species, which made the need for several species-level synonymies immediately apparent. However, identifying whether the species and genera treated by Carvalho and Gross (1982) really were "Leucophoropterini" required a significant reworking of the concept of the tribe across its entire geographic distribution as well as a detailed reexamination of the entire Australian fauna.

Schuh (1984), shortly after Carvalho and Gross (1982), provided the most extensive treatment of the tribe, focusing on the Indo-Pacific fauna, describing 10 new genera and over 30 new species, and completing a phylogenetic analysis. Schuh (1984) made some brief observations on the work of Carvalho and Gross (1982), but he did not examine specimens of any of the relevant taxa. The present paper is the first attempt to systematically address the Leucophoropterini across its entire geographic distribution. The Australian fauna is redescribed in this work to complement the detailed regional study of Schuh (1984) on the Indo-Pacific fauna, because the majority of the taxonomic additions and corrections are within Australian taxa. Keys to the genera within the tribe and species within the largest genera *Ausejanus,* n. gen., and *Blesingia* Carvalho and Gross are provided, a checklist of the species of Leucophoropterini is included, and taxa new to science from both Australia and the Indo-Pacific are described.

MATERIALS AND METHODS

The circumscription of the Leucophoropterini is addressed by Menard et al. (in press) through the use of morphological and DNA-sequence data for a sample of more than 90 genera of Phylinae representing all currently recognized tribal groupings. The monophyly and interrelationships of the genera placed in the newly circumscribed Leucophoropterini was tested in a phylogenetic analysis based on morphological character data (Menard and Woolley, in press). An unweighted parsimony analysis was conducted on the dataset using 5,000 random addition sequences, and all of the New Technology search algorithms in TNT 1.1 (Goloboff et al., 2003B). To test the fit of the data with respect to homoplasy, implied weighting (Goloboff 1993) was also applied in a separate TNT analysis using the same parameters. The results of these analyses and a discussion of ant-mimetic character states and biogeography are included in Menard and Woolley (in press).

During the course of this research project, matrix code labels were affixed to the examined specimens. These codes are "unique specimen

identifiers" (USIs), which include an institution and project code (AMNH_PBI) followed by a unique number (00368204). USI codes are included for all specimens examined and illustrated. All latitude-longitude data for localities are written in degrees and decimal parts thereof. Altitude data are given in metric units. Please refer to http://www.discoverlife.org and http://research.amnh.org/pbi/heteropteraspeciespage to access additional information on specimens examined for the Planetary Biodiversity Inventory project. All specimens examined in this work were georeferenced and are mapped herein. Material known only from the holotypes and not directly examined was georeferenced from the label data listed in the original description, and mapped to demonstrate the known ranges.

Structural information is documented through the use of light microscopy. Color habitus images of the bugs and images of the female genitalia were prepared using a Zeiss Axiovision camera, Leica stereo microscope, and Zeiss Axiovision software; serially focused stacks of images were combined in Helicon Focus. Habitus photos were shot at different magnifications due to size differences among the specimens; therefore, the images are resized so that relative sizes can be deduced from comparison of the specimen images. Actual sizes of specimens can be determined by referring to table 1. Measurements correspond to taxa redescribed herein or newly described taxa. All measurements are in millimeters and were made using an eyepiece reticule on a Zeiss Stemi DRC stereomicroscope; the raw data were converted into millimeters using a spreadsheet in Microsoft Excel 2003.

Female genitalia were prepared by suspending the dissected structures in glycerin and photographed in the same manner as the habitus photos. Terminology of female genitalic characters follows Schwartz (2011).

Specimens examined: Type material of many Leucophoropterini species recognized by Carvalho and Gross (1982) and Schuh (1984) was obtained for study during this investigation. However, we were not able to examine representatives of several species known only from holotypes; our understanding of the identities of some taxa was therefore arrived at by studying images of the holotypes sent from their home institutions. Taxa for which we could not view the holotype directly are indicated with the statement "[not examined]," following the holotype label information as reported from the original literature. Specimens known only from the holotype and not dissected in the original works were not dissected in this work. If holotype material was directly examined, verbatim label data from the original labels are included. Taxa with adequate published descriptions are not redescribed; revised diagnoses/descriptions are presented for all other taxa.

Abbreviations used in text are as follows: n. gen. = new genus; n. sp. = new species; descr. = description; fig. = figure, figures; diag. = diagnosis; biol. = biology; DV = dorsal view; MG = male genitalia; FG = female genitalia; n. gen. = new genus.

Specimens examined during the course of this revision are deposited in the following institutions. The abbreviations listed are used in the Specimens Examined sections:

ANIC	Australian National Collection, Canberra
AM	Australian Museum, Sydney
AMNH	American Museum of Natural History, New York
BMNH	Natural History Museum, London, England
BPBM	Bernice P. Bishop Museum, Honolulu
CAS	California Academy of Sciences, San Francisco
DPIQ	Department of Primary Industries of Queensland, Brisbane
HUES	The Biological Laboratory, Hokkaido University of Education, Sapporo
IRSB	Belgian Royal Institute of Natural Sciences, Bruxelles
MVMA	National Museum of Victoria, Melbourne
QU	Queensland University, Brisbane
QM	Queensland Museum, Brisbane
SAMA	South Australian Museum, Adelaide
TAMU	Texas A&M University, College Station
USNM	National Museum of Natural History, Smithsonian Institution, Washington, D.C.
UNSW	University of New South Wales, Sydney

TABLE 1.
Measurements of newly described and redescribed Leucophoropterini
All measurements are average lengths in millimeters. Abbreviations used in table:
Mn = mean; Va = value; Rg = range.

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
Aitkenia												
A. latevagans												
♂ **(N=2)**	**Mn**	**0.97**	**2.95**	**0.48**	**0.66**	**0.24**	**0.46**	**0.89**	**2.67**	**0.40**	**0.40**	**0.44**
	SD	0.04	0.04	0.00	0.01	0.00	0.00	0.01	0.07	n/a	0.00	0.01
	Rg	0.05	0.05	0.00	0.02	0.00	0.00	0.01	0.10	0.00	0.00	0.02
	Min	0.94	2.92	0.48	0.65	0.24	0.46	0.89	2.62	0.40	0.40	0.43
	Max	0.99	2.97	0.48	0.67	0.24	0.46	0.90	2.72	0.40	0.40	0.44
♀ **(N=10)**	**Mn**	**1.03**	**2.85**	**0.53**	**0.68**	**0.35**	**0.48**	**0.91**	**0.88**	**0.37**	**0.43**	**0.36**
	SD	0.04	0.20	0.01	0.02	0.01	0.02	0.03	0.09	0.02	0.02	0.03
	Rg	0.10	0.54	0.03	0.04	0.03	0.06	0.09	0.22	0.06	0.06	0.06
	Min	0.99	2.62	0.51	0.67	0.33	0.44	0.87	0.79	0.35	0.40	0.33
	Max	1.09	3.17	0.54	0.71	0.37	0.51	0.96	1.02	0.41	0.46	0.40
A. exocarpos												
♂ **(N=1)**	**Va**	**0.99**	**2.97**	**0.52**	**0.71**	**0.33**	**0.48**	**0.84**	**0.89**	**0.40**	**0.40**	**0.46**
♀ **(N=10)**	**Mn**	**0.97**	**2.70**	**0.58**	**0.78**	**0.43**	**0.50**	**0.89**	**0.87**	**0.35**	**0.40**	**0.34**
	SD	0.03	0.08	0.01	0.01	0.01	0.02	0.03	0.04	0.01	0.01	0.01
	Rg	0.12	0.25	0.03	0.03	0.05	0.05	0.10	0.11	0.02	0.03	0.05
	Min	0.92	2.57	0.56	0.76	0.41	0.48	0.83	0.81	0.34	0.38	0.32
	Max	1.04	2.82	0.59	0.79	0.46	0.52	0.94	0.92	0.37	0.41	0.37
Arafuramiris												
A. heath												
♂ **(N=1)**	**Va**	**0.97**	**2.97**	**1.78**	**0.75**	**0.29**	**0.71**	**1.02**	**0.97**	**0.29**	**0.32**	**0.48**
♀ **(N=1)**	**Va**	**0.89**	**2.67**	**0.56**	**0.78**	**0.38**	**0.67**	**0.90**	**0.73**	**n/a**	**n/a**	**0.44**
A. oswaldi												
♂ **(N=2)**	**Mn**	**0.84**	**2.85**	**0.59**	**0.78**	**0.21**	**0.67**	**0.94**	**0.86**	**n/a**	**0.41**	**0.50**
	SD	0.07	0.04	0.02	0.02	0.02	0.00	0.00	0.04	-	-	0.01
	Rg	0.10	0.05	0.03	0.03	0.02	0.00	0.00	0.06	-	-	0.02
	Min	0.79	2.82	0.57	0.76	0.20	0.67	0.94	0.83	-	0.41	0.49
	Max	0.89	2.87	0.60	0.79	0.22	0.67	0.94	0.89	-	0.41	0.51
A. queenslandensis												
♂ **(N=5)**	**Mn**	**1.03**	**3.42**	**0.61**	**0.86**	**0.24**	**0.75**	**1.01**	**0.89**	**0.41**	**0.49**	**0.55**
	SD	0.03	0.15	0.01	0.02	0.02	0.01	0.04	0.03	0.04	0.04	0.03
	Rg	0.10	0.50	0.05	0.06	0.05	0.05	0.14	0.11	0.11	0.13	0.11
	Min	0.99	3.22	0.59	0.83	0.22	0.73	0.94	0.84	0.33	0.43	0.51
	Max	1.09	3.71	0.63	0.89	0.27	0.78	1.08	0.95	0.44	0.56	0.62
♀ **(N=5)**	**Mn**	**0.93**	**3.00**	**0.60**	**0.79**	**0.41**	**0.76**	**0.95**	**0.76**	**0.36**	**0.43**	**0.52**
	SD	0.05	0.08	0.01	0.02	0.01	0.02	0.03	0.03	0.02	0.03	0.02
	Rg	0.20	0.25	0.05	0.08	0.03	0.10	0.11	0.11	0.10	0.11	0.08
	Min	0.84	2.87	0.59	0.75	0.40	0.71	0.89	0.71	0.30	0.37	0.48
	Max	1.04	3.12	0.63	0.83	0.43	0.81	1.00	0.83	0.40	0.48	0.56
Ausejanus												
A. albisignatus												
♂ **(N=51)**	**Mn**	**1.21**	**3.56**	**0.53**	**0.73**	**0.23**	**0.50**	**1.01**	**1.05**	**0.46**	**0.49**	**0.55**
	SD	0.06	0.18	0.01	0.03	0.01	0.03	0.04	0.06	0.03	0.03	0.04
	Rg	0.30	0.87	0.06	0.10	0.05	0.13	0.17	0.29	0.10	0.11	0.19
	Min	1.09	3.96	0.57	0.78	0.25	0.57	1.10	1.19	0.51	0.56	0.63
	Max	1.39	3.09	0.51	0.67	0.21	0.44	0.92	0.90	0.41	0.44	0.44

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
♀ **(N=81)**	**Mn**	**1.35**	**3.29**	**0.55**	**0.74**	**0.35**	**0.52**	**1.10**	**0.87**	**0.46**	**0.55**	**0.47**
	SD	0.10	0.17	0.02	0.03	0.02	0.02	0.06	0.05	0.02	0.03	0.03
	Rg	0.45	0.74	0.08	0.12	0.08	0.10	0.32	0.29	0.11	0.21	0.13
	Min	1.09	2.92	0.51	0.67	0.30	0.46	0.90	0.73	0.40	0.41	0.40
	Max	1.53	3.66	0.59	0.79	0.38	0.56	1.22	1.02	0.51	0.62	0.52
A. arvensus												
♂ **(N=10)**	**Mn**	**1.29**	**3.75**	**0.51**	**0.70**	**0.26**	**0.47**	**0.98**	**0.88**	**0.45**	**0.49**	**0.64**
	SD	0.04	0.11	0.01	0.01	0.01	0.01	0.02	0.04	0.02	0.02	0.03
	Rg	0.15	0.30	0.02	0.05	0.03	0.02	0.06	0.13	0.05	0.06	0.08
	Min	1.19	3.56	0.51	0.67	0.24	0.46	0.95	0.83	0.43	0.46	0.60
	Max	1.34	3.86	0.52	0.71	0.27	0.48	1.02	0.95	0.48	0.52	0.68
♀ **(N=18)**	**Mn**	**1.22**	**2.98**	**0.52**	**0.71**	**0.36**	**0.44**	**0.97**	**0.74**	**0.41**	**0.48**	**0.43**
	SD	0.05	0.07	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.02
	Rg	0.20	0.20	0.03	0.04	0.02	0.05	0.07	0.08	0.06	0.05	0.06
	Min	1.09	2.77	0.51	0.68	0.33	0.41	0.92	0.70	0.38	0.46	0.38
	Max	1.29	3.07	0.54	0.73	0.37	0.46	1.00	0.78	0.44	0.51	0.46
A. bournda												
♂ **(N=10)**	**Mn**	**1.13**	**3.34**	**1.55**	**2.11**	**0.73**	**0.46**	**0.92**	**2.82**	**0.42**	**0.45**	**0.53**
	SD	0.04	0.12	0.02	0.03	0.02	0.02	0.01	0.14	0.02	0.01	0.02
	Rg	0.10	0.30	0.05	0.05	0.05	0.03	0.03	0.30	0.05	0.03	0.05
	Min	1.09	3.22	1.53	2.08	0.69	0.44	0.90	2.67	0.40	0.44	0.51
	Max	1.19	3.51	1.58	2.13	0.74	0.48	0.94	2.97	0.44	0.48	0.56
♀ **(N=18)**	**Mn**	**1.19**	**2.85**	**0.50**	**0.64**	**0.32**	**0.43**	**0.91**	**0.77**	**0.37**	**0.43**	**0.40**
	SD	0.05	0.17	0.01	0.01	0.00	0.02	0.03	0.03	0.01	0.02	0.02
	Rg	0.10	0.40	0.02	0.03	0.01	0.05	0.08	0.06	0.03	0.05	0.06
	Min	1.14	2.67	0.49	0.62	0.31	0.40	0.87	0.73	0.35	0.41	0.37
	Max	1.24	3.07	0.52	0.65	0.32	0.44	0.95	0.79	0.38	0.46	0.43
A. femoralis												
♂ **(N=22)**	**Mn**	**1.23**	**3.60**	**0.56**	**0.78**	**0.25**	**0.55**	**1.07**	**1.15**	**0.48**	**0.53**	**0.54**
	SD	0.04	0.11	0.01	0.02	0.01	0.02	0.04	0.04	0.02	0.02	0.02
	Rg	0.15	0.47	0.03	0.06	0.04	0.06	0.16	0.17	0.10	0.06	0.10
	Min	1.14	3.32	0.54	0.75	0.24	0.51	0.97	1.05	0.43	0.48	0.48
	Max	1.29	3.79	0.57	0.80	0.28	0.57	1.13	1.22	0.52	0.54	0.57
♀ **(N=30)**	**Mn**	**1.33**	**3.36**	**0.57**	**0.78**	**0.35**	**0.57**	**1.15**	**0.93**	**0.49**	**0.58**	**0.48**
	SD	0.06	0.14	0.02	0.02	0.01	0.03	0.04	0.04	0.02	0.02	0.03
	Rg	0.25	0.59	0.05	0.08	0.05	0.10	0.17	0.17	0.06	0.08	0.13
	Min	1.24	3.02	0.54	0.73	0.33	0.51	1.06	0.84	0.46	0.54	0.40
	Max	1.49	3.61	0.59	0.81	0.38	0.60	1.24	1.02	0.52	0.62	0.52
A. cordatus												
♂ **(N=4)**	**Mn**	**0.98**	**2.57**	**1.53**	**0.69**	**0.74**	**0.42**	**0.84**	**0.76**	**0.33**	**0.39**	**0.38**
	SD	0.08	0.21	0.08	0.04	0.04	0.04	0.07	0.07	0.03	0.04	0.05
	Rg	0.20	0.50	0.17	0.09	0.10	0.08	0.17	0.16	0.06	0.10	0.11
	Min	0.89	2.38	1.46	0.66	0.69	0.40	0.76	0.68	0.30	0.35	0.33
	Max	1.09	2.87	1.63	0.75	0.79	0.48	0.94	0.84	0.37	0.44	0.44
♀ **(N=2)**	**Mn**	**1.14**	**2.62**	**0.52**	**0.68**	**0.35**	**0.44**	**0.93**	**0.67**	**0.35**	**0.41**	**0.41**
	SD	-	0.07	-	-	0.01	0.01	0.03	-	0.02	-	0.02
	Rg	-	0.10	-	-	0.01	0.02	0.05	-	0.03	-	0.03
	Min	1.14	2.57	0.52	0.68	0.34	0.43	0.90	0.67	0.33	0.41	0.40
	Max	1.14	2.67	0.52	0.68	0.35	0.44	0.95	0.67	0.37	0.41	0.43

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
A. iris												
♂ **(N=4)**	**Mn**	**1.06**	**2.80**	**0.52**	**0.70**	**0.34**	**0.44**	**0.90**	**0.81**	**0.38**	**0.44**	**0.42**
	SD	0.03	0.15	0.01	-	0.00	0.01	0.02	0.02	0.00	0.01	0.02
	Rg	0.05	0.30	0.02	-	0.01	0.02	0.03	0.05	0.00	0.02	0.03
	Min	1.04	2.67	0.51	0.70	0.33	0.43	0.89	0.78	0.38	0.43	0.41
	Max	1.09	2.97	0.53	0.70	0.34	0.44	0.92	0.83	0.39	0.44	0.43
♀ **(N=1)**	**Va**	**1.09**	**2.48**	**0.51**	**0.68**	**0.36**	**0.35**	**0.92**	**0.68**	**0.32**	**0.43**	**0.35**
A. luteoelytratus												
♂ **(N=12)**	**Mn**	**1.05**	**3.34**	**0.47**	**0.63**	**0.25**	**0.43**	**0.87**	**0.94**	**0.40**	**0.40**	**0.60**
	SD	0.03	0.09	0.01	0.01	0.01	0.01	0.02	0.03	0.01	0.02	0.02
	Rg	0.10	0.25	0.02	0.02	0.02	0.03	0.06	0.10	0.03	0.05	0.06
	Min	0.99	3.22	0.46	0.63	0.24	0.41	0.84	0.89	0.38	0.38	0.57
	Max	1.09	3.47	0.48	0.64	0.26	0.44	0.90	0.98	0.41	0.43	0.63
♀ **(N=7)**	**Mn**	**1.06**	**2.37**	**0.50**	**0.63**	**0.36**	**0.39**	**0.80**	**0.80**	**0.31**	**0.37**	**0.36**
	SD	0.02	0.05	0.01	0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.01
	Rg	0.05	0.12	0.02	0.02	0.02	0.03	0.08	0.08	0.02	0.02	0.02
	Min	1.04	2.30	0.49	0.63	0.35	0.37	0.76	0.76	0.30	0.36	0.35
	Max	1.09	2.43	0.51	0.65	0.37	0.40	0.84	0.84	0.32	0.38	0.37
A. macrozonata												
♂ **(N=1)**	**Va**	**0.99**	**2.97**	**0.46**	**0.68**	**0.89**	**0.43**	**0.89**	**0.84**	**0.40**	**0.43**	**0.44**
♀ **(N=2)**	**Mn**	**1.05**	**2.55**	**0.48**	**0.67**	**0.35**	**0.42**	**0.87**	**0.73**	**0.35**	**0.40**	**0.35**
	SD	0.02	0.04	-	0.01	0.03	0.01	0.03	0.02	0.02	0.01	0.04
	Rg	0.02	0.05	-	0.02	0.04	0.02	0.05	0.03	0.03	0.02	0.06
	Min	1.04	2.52	0.48	0.67	0.33	0.41	0.84	0.71	0.33	0.40	0.32
	Max	1.06	2.57	0.48	0.68	0.37	0.43	0.89	0.75	0.37	0.41	0.38
A. mcdonaldi												
♂ **(N=32)**	**Mn**	**1.24**	**3.58**	**0.54**	**0.71**	**0.29**	**0.51**	**1.01**	**0.95**	**0.45**	**0.50**	**0.53**
	SD	0.08	0.13	0.02	0.04	0.01	0.03	0.05	0.03	0.03	0.03	0.04
	Rg	0.30	0.57	0.06	0.12	0.05	0.11	0.24	0.16	0.14	0.14	0.17
	Min	1.09	3.32	0.49	0.65	0.27	0.46	0.86	0.87	0.37	0.43	0.44
	Max	1.39	3.89	0.56	0.77	0.32	0.57	1.10	1.03	0.51	0.57	0.62
♀ **(N=20)**	**Mn**	**1.26**	**3.17**	**0.53**	**0.68**	**0.35**	**0.47**	**1.00**	**0.79**	**0.42**	**0.47**	**0.41**
	SD	0.08	0.10	0.01	0.01	0.01	0.02	0.04	0.04	0.02	0.02	0.03
	Rg	0.25	0.40	0.05	0.06	0.03	0.06	0.13	0.14	0.06	0.10	0.10
	Min	1.14	2.97	0.51	0.63	0.33	0.43	0.94	0.73	0.38	0.41	0.37
	Max	1.39	3.37	0.56	0.70	0.37	0.49	1.06	0.87	0.44	0.51	0.48
A. meridionalis												
♂ **(N=20)**	**Mn**	**1.02**	**3.00**	**0.50**	**0.65**	**0.27**	**0.42**	**0.87**	**0.90**	**0.38**	**0.42**	**0.48**
	SD	0.05	0.13	0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.02	0.02
	Rg	0.17	0.47	0.02	0.03	0.03	0.05	0.08	0.13	0.06	0.06	0.05
	Min	0.94	2.72	0.49	0.63	0.25	0.40	0.84	0.83	0.33	0.38	0.46
	Max	1.11	3.19	0.52	0.67	0.29	0.44	0.92	0.95	0.40	0.44	0.51
♀ **(N=20)**	**Mn**	**1.09**	**2.63**	**0.51**	**0.67**	**0.34**	**0.41**	**0.91**	**0.72**	**0.36**	**0.44**	**0.40**
	SD	0.06	0.11	0.01	0.01	0.01	0.01	0.03	0.03	0.01	0.02	0.01
	Rg	0.20	0.45	0.02	0.03	0.05	0.05	0.10	0.10	0.06	0.10	0.05
	Min	0.99	2.43	0.50	0.65	0.32	0.38	0.86	0.66	0.33	0.38	0.37
	Max	1.19	2.87	0.52	0.68	0.37	0.43	0.95	0.76	0.40	0.48	0.41

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
A. minutus												
♂ **(N=12)**	**Mn**	**1.12**	**3.11**	**0.47**	**0.61**	**0.22**	**0.40**	**0.85**	**0.85**	**0.39**	**0.42**	**0.49**
	SD	0.04	0.14	0.01	0.01	0.01	0.01	0.02	0.06	0.01	0.02	0.03
	Rg	0.15	0.45	0.04	0.04	0.03	0.05	0.08	0.24	0.05	0.05	0.08
	Min	1.04	2.87	0.44	0.59	0.21	0.38	0.81	0.75	0.37	0.40	0.44
	Max	1.19	3.32	0.48	0.63	0.24	0.43	0.89	0.98	0.41	0.44	0.52
♀ **(N=30)**	**Mn**	**1.10**	**2.67**	**0.48**	**0.60**	**0.30**	**0.39**	**0.87**	**0.72**	**0.36**	**0.43**	**0.39**
	SD	0.08	0.15	0.02	0.02	0.01	0.03	0.06	0.05	0.02	0.03	0.03
	Rg	0.30	0.64	0.06	0.09	0.05	0.10	0.22	0.22	0.08	0.10	0.10
	Min	0.99	2.43	0.46	0.56	0.29	0.35	0.78	0.63	0.33	0.40	0.35
	Max	1.29	3.07	0.52	0.65	0.33	0.44	1.00	0.86	0.41	0.49	0.44
A. neboissi												
♂ **(N=7)**	**Mn**	**1.12**	**3.09**	**0.52**	**0.76**	**0.24**	**0.47**	**0.94**	**0.90**	**0.41**	**0.45**	**0.49**
	SD	0.06	0.07	0.01	0.01	0.01	0.02	0.03	0.04	0.02	0.02	0.01
	Rg	0.20	0.20	0.02	0.02	0.02	0.05	0.10	0.11	0.05	0.05	0.03
	Min	1.04	3.02	0.51	0.75	0.23	0.44	0.90	0.84	0.40	0.43	0.48
	Max	1.24	3.22	0.52	0.77	0.25	0.49	1.00	0.95	0.44	0.48	0.51
♀ **(N=10)**	**Mn**	**1.29**	**3.09**	**0.54**	**0.74**	**0.36**	**0.48**	**1.05**	**0.86**	**0.41**	**0.50**	**0.47**
	SD	0.07	0.11	0.01	0.02	0.01	0.02	0.04	0.03	0.02	0.02	0.01
	Rg	0.20	0.35	0.03	0.04	0.02	0.05	0.13	0.10	0.05	0.06	0.03
	Min	1.19	2.92	0.52	0.72	0.35	0.46	1.00	0.83	0.40	0.48	0.44
	Max	1.39	3.27	0.56	0.76	0.37	0.51	1.13	0.92	0.44	0.54	0.48
A. schwartzi												
♂ **(N=4)**	**Mn**	**1.25**	**3.55**	**0.51**	**0.72**	**0.21**	**0.50**	**1.04**	**1.05**	**0.48**	**0.54**	**0.56**
	SD	0.02	0.05	0.01	0.01	0.01	0.02	0.02	0.05	0.02	0.03	0.02
	Rg	0.05	0.10	0.02	0.02	0.02	0.03	0.03	0.10	0.03	0.06	0.03
	Min	1.24	3.51	0.51	0.71	0.21	0.48	1.03	1.02	0.46	0.51	0.54
	Max	1.29	3.61	0.52	0.73	0.22	0.51	1.06	1.11	0.49	0.57	0.57
♀ **(N=6)**	**Mn**	**1.24**	**2.92**	**0.54**	**0.68**	**0.33**	**0.50**	**1.05**	**0.84**	**0.44**	**0.51**	**0.45**
	SD	0.03	0.06	0.01	0.01	0.01	0.01	0.02	0.03	0.01	0.02	0.01
	Rg	0.10	0.15	0.03	0.02	0.03	0.02	0.05	0.10	0.02	0.06	0.03
	Min	1.19	2.87	0.52	0.67	0.32	0.48	1.03	0.79	0.43	0.48	0.43
	Max	1.29	3.02	0.56	0.68	0.35	0.51	1.08	0.89	0.44	0.54	0.46
A. tiramisu												
♂ **(N=40)**	**Mn**	**1.02**	**2.98**	**0.50**	**0.68**	**0.33**	**0.42**	**0.88**	**0.88**	**0.39**	**0.41**	**0.51**
	SD	0.05	0.14	0.01	0.02	0.01	0.02	0.03	0.05	0.02	0.02	0.03
	Rg	0.20	0.69	0.06	0.08	0.03	0.08	0.14	0.16	0.11	0.08	0.11
	Min	0.89	2.57	0.46	0.63	0.32	0.37	0.81	0.79	0.32	0.38	0.44
	Max	1.09	3.27	0.52	0.71	0.35	0.44	0.95	0.95	0.43	0.46	0.56
♀ **(N=35)**	**Mn**	**1.03**	**2.56**	**0.53**	**0.71**	**0.39**	**0.41**	**0.86**	**0.77**	**0.34**	**0.40**	**0.38**
	SD	0.05	0.11	0.02	0.02	0.01	0.02	0.03	0.03	0.02	0.02	0.02
	Rg	0.17	0.50	0.08	0.10	0.05	0.10	0.10	0.11	0.08	0.10	0.06
	Min	0.92	2.23	0.48	0.65	0.37	0.37	0.81	0.70	0.29	0.35	0.34
	Max	1.09	2.72	0.56	0.75	0.41	0.46	0.90	0.81	0.37	0.44	0.40
A.uestaustralianus												
♂ **(N=1)**	**Va**	**1.24**	**3.81**	**0.51**	**0.68**	**0.24**	**0.49**	**0.92**	**0.89**	**0.35**	**0.48**	**0.63**

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
A. vividus												
♂ **(N=40)**	**Mn**	**1.26**	**3.95**	**0.54**	**0.72**	**0.22**	**0.50**	**1.00**	**1.10**	**0.48**	**0.49**	**0.66**
	SD	0.09	0.37	0.01	0.01	0.02	0.02	0.05	0.11	0.04	0.04	0.08
	Rg	0.35	1.14	0.06	0.07	0.06	0.08	0.19	0.35	0.14	0.16	0.29
	Min	1.09	3.32	0.51	0.68	0.19	0.46	0.89	0.92	0.40	0.40	0.51
	Max	1.44	4.46	0.56	0.75	0.25	0.54	1.08	1.27	0.54	0.56	0.79
♀ **(N=50)**	**Mn**	**1.20**	**3.19**	**0.55**	**0.69**	**0.32**	**0.48**	**0.98**	**0.82**	**0.43**	**0.47**	**0.45**
	SD	0.06	0.23	0.02	0.02	0.01	0.02	0.04	0.06	0.03	0.03	0.03
	Rg	0.25	1.36	0.08	0.06	0.05	0.09	0.16	0.25	0.10	0.11	0.13
	Min	1.09	2.20	0.51	0.67	0.30	0.44	0.90	0.70	0.38	0.43	0.39
	Max	1.34	3.56	0.59	0.73	0.35	0.52	1.06	0.95	0.48	0.54	0.52
Austrodapus												
A. nitens												
♂ **(N=3)**	**Mn**	**1.05**	**3.18**	**0.57**	**0.71**	**0.33**	**0.74**	**1.08**	**0.93**	**0.40**	**0.51**	**0.46**
	SD	0.01	0.10	0.01	0.03	0.00	0.02	0.02	0.06	0.03	0.01	0.04
	Rg	0.02	0.20	0.02	0.06	0.01	0.05	0.05	0.11	0.05	0.02	0.08
	Min	1.04	3.07	0.56	0.67	0.33	0.71	1.06	0.89	0.38	0.51	0.43
	Max	1.06	3.27	0.57	0.73	0.33	0.76	1.11	1.00	0.43	0.52	0.51
♀ **(N=3)**	**Mn**	**1.17**	**3.20**	**0.59**	**0.73**	**0.40**	**0.75**	**1.12**	**0.91**	**0.41**	**0.52**	**0.44**
	SD	0.03	0.12	0.00	0.02	-	0.02	0.04	0.01	0.02	0.04	0.02
	Rg	0.05	0.25	0.01	0.04	-	0.05	0.06	0.02	0.03	0.08	0.05
	Min	1.14	3.07	0.59	0.71	0.40	0.73	1.08	0.90	0.40	0.48	0.41
	Max	1.19	3.32	0.60	0.75	0.40	0.78	1.14	0.92	0.43	0.56	0.46
Biromiris												
B. binjour												
♂ **(N=1)**	**Va**	**0.99**	**3.12**	**0.62**	**0.72**	**0.37**	**0.67**	**1.02**	**0.98**	**0.29**	**0.27**	**0.41**
B. cassis												
♂ **(N=1)**	**Va**	**1.04**	**3.22**	**0.62**	**0.74**	**0.37**	**0.73**	**1.03**	**0.89**	**0.38**	**0.41**	**0.44**
B. enarotadi												
♂ **(N=1)**	**Va**	**0.99**	**3.56**	**0.59**	**0.75**	**0.32**	**0.68**	**1.03**	**n/a**	**0.33**	**0.35**	**0.43**
B. scheyville												
♂ **(N=1)**	**Va**	**0.99**	**3.71**	**0.64**	**0.79**	**0.37**	**0.73**	**1.06**	**0.86**	**0.49**	**0.49**	**0.48**
Blesingia												
B. fasciatipennis												
♂ **(N=4)**	**Mn**	**1.06**	**3.51**	**0.66**	**0.76**	**0.66**	**0.58**	**0.98**	**1.21**	**0.46**	**0.48**	**0.44**
	SD	0.09	0.11	0.02	0.02	0.05	0.03	0.03	0.06	0.01	0.01	0.05
	Rg	0.20	0.25	0.06	0.06	0.12	0.06	0.06	0.11	0.03	0.03	0.11
	Min	0.99	3.37	0.63	0.73	0.62	0.54	0.95	1.14	0.44	0.46	0.40
	Max	1.19	3.61	0.69	0.79	0.74	0.60	1.02	1.25	0.48	0.49	0.51
♀ **(N=4)**	**Mn**	**1.10**	**3.32**	**0.69**	**0.72**	**0.32**	**0.56**	**0.95**	**1.03**	**0.43**	**0.48**	**0.39**
	SD	0.08	0.22	0.03	0.03	0.02	0.02	0.01	0.04	0.02	0.02	0.03
	Rg	0.17	0.50	0.07	0.06	0.03	0.05	0.03	0.08	0.05	0.05	0.07
	Min	1.01	3.07	0.66	0.70	0.30	0.54	0.93	0.98	0.41	0.46	0.35
	Max	1.19	3.56	0.73	0.76	0.33	0.59	0.96	1.06	0.46	0.51	0.42

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
B. gularis												
♂ **(N=10)**	**Mn**	**1.07**	**3.54**	**0.68**	**0.70**	**0.72**	**0.57**	**0.88**	**1.08**	**0.40**	**0.40**	**0.50**
	SD	0.04	0.15	0.01	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.02
	Rg	0.12	0.45	0.02	0.03	0.05	0.06	0.08	0.14	0.07	0.05	0.05
	Min	1.01	3.32	0.67	0.67	0.69	0.54	0.83	1.02	0.36	0.37	0.48
	Max	1.14	3.76	0.69	0.71	0.74	0.60	0.91	1.16	0.43	0.41	0.52
♀ **(N=10)**	**Mn**	**1.00**	**3.10**	**0.77**	**0.74**	**0.32**	**0.58**	**0.84**	**0.89**	**0.37**	**0.38**	**0.36**
	SD	0.05	0.09	0.02	0.02	0.01	0.03	0.03	0.04	0.01	0.01	0.02
	Rg	0.12	0.25	0.08	0.07	0.03	0.11	0.08	0.16	0.02	0.05	0.06
	Min	0.94	2.97	0.73	0.70	0.31	0.52	0.80	0.79	0.37	0.35	0.33
	Max	1.06	3.22	0.81	0.77	0.34	0.63	0.88	0.95	0.38	0.40	0.40
B. tamborinea												
♂ **(N=1)**	**Va**	**1.09**	**3.12**	**0.65**	**0.71**	**0.27**	**0.65**	**0.98**	**1.00**	**0.43**	**0.49**	**0.37**
Collessicoris												
C. bellissimus												
♂ **(N=5)**	**Mn**	**0.93**	**2.98**	**0.56**	**0.69**	**0.33**	**0.57**	**0.88**	**1.01**	**0.35**	**0.35**	**0.37**
	SD	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.03	0.02	0.01	0.01
	Rg	0.02	0.15	0.01	0.02	0.01	0.02	0.01	0.06	0.03	0.02	0.03
	Min	0.92	2.92	0.56	0.68	0.33	0.56	0.88	0.98	0.33	0.35	0.35
	Max	0.94	3.07	0.56	0.70	0.33	0.57	0.89	1.05	0.37	0.37	0.38
♀ **(N=5)**	**Mn**	**0.86**	**2.82**	**0.64**	**0.82**	**0.48**	**0.61**	**0.86**	**0.94**	**0.27**	**0.32**	**0.32**
	SD	0.03	0.08	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.04	0.00
	Rg	0.07	0.20	0.02	0.02	0.02	0.02	0.06	0.03	0.05	0.10	0.01
	Min	0.82	2.72	0.63	0.81	0.48	0.60	0.83	0.92	0.24	0.27	0.31
	Max	0.89	2.92	0.65	0.83	0.49	0.62	0.88	0.95	0.29	0.37	0.32
Ctypomiris												
C. solomonensis												
♂ **(N=2)**	**Mn**	**0.78**	**2.45**	**0.48**	**1.15**	**0.59**	**0.52**	**0.75**	**1.63**	**0.28**	**0.34**	**0.27**
	SD	0.02	0.11	0.01	0.82	0.43	0.01	0.02	1.12	0.01	0.01	-
	Rg	0.02	0.15	0.02	1.16	0.61	0.01	0.03	1.58	0.02	0.02	-
	Min	0.77	2.38	0.48	0.57	0.29	0.52	0.73	0.84	0.27	0.33	0.27
	Max	0.79	2.52	0.49	1.73	0.89	0.52	0.76	2.43	0.29	0.35	0.27
Gulacapsus												
G. australiensis												
♂ **(N=1)**	**Va**	**0.89**	**3.32**	**0.73**	**0.68**	**0.16**	**0.56**	**0.75**	**1.10**	**0.40**	**0.40**	**0.40**
♀ **(N=1)**	**Va**	**0.92**	**3.02**	**0.79**	**0.67**	**0.24**	**0.52**	**0.76**	**1.02**	**0.37**	**0.35**	**0.33**
Johnstonsonius												
J. phalarosus												
♂ **(N=2)**	**Mn**	**0.64**	**2.20**	**0.45**	**0.52**	**0.28**	**0.41**	**0.64**	**0.68**	**0.26**	**0.34**	**0.23**
	SD	-	0.04	0.01	0.01	-	-	0.01	-	0.01	0.03	0.01
	Rg	-	0.05	0.02	0.01	-	-	0.02	-	0.02	0.05	0.02
	Min	0.64	2.18	0.44	0.52	0.28	0.41	0.63	0.68	0.25	0.32	0.22
	Max	0.64	2.23	0.46	0.52	0.28	0.41	0.65	0.68	0.27	0.37	0.24
♀ **(N=3)**	**Mn**	**0.71**	**2.23**	**0.47**	**0.52**	**0.30**	**0.46**	**0.64**	**0.58**	**0.24**	**0.28**	**0.24**
	SD	0.08	0.13	0.01	0.02	0.01	0.10	0.01	0.01	0.01	0.01	0.01
	Rg	0.15	0.25	0.02	0.04	0.02	0.19	0.02	0.02	0.02	0.02	0.02
	Min	0.64	2.08	0.46	0.50	0.29	0.38	0.63	0.57	0.24	0.27	0.24
	Max	0.79	2.33	0.48	0.54	0.30	0.57	0.65	0.59	0.25	0.29	0.25

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
Leucophoroptera												
L. gloriosa												
♂ **(N=1)**	**Va**	**0.84**	**2.87**	**0.52**	**0.67**	**0.84**	**0.51**	**0.83**	**0.98**	**0.35**	**0.40**	**0.43**
L. kangrooina												
♂ **(N=4)**	**Mn**	**0.88**	**2.70**	**0.53**	**0.61**	**0.89**	**0.44**	**0.71**	**2.77**	**0.31**	**0.33**	**0.35**
	SD	0.02	0.06	0.02	0.01	0.08	0.02	0.03	0.05	0.02	0.02	0.02
	Rg	0.05	0.15	0.04	0.03	0.17	0.05	0.06	0.10	0.03	0.05	0.03
	Min	0.84	2.62	0.51	0.59	0.77	0.41	0.68	2.72	0.29	0.30	0.33
	Max	0.89	2.77	0.55	0.62	0.94	0.46	0.74	2.82	0.32	0.35	0.37
♀ **(N=2)**	**Mn**	**0.73**	**2.50**	**0.57**	**0.63**	**0.34**	**0.45**	**0.72**	**0.81**	**0.29**	**0.32**	**0.33**
	SD	0.02	0.04	-	0.02	-	0.01	0.01	-	0.01	-	0.01
	Rg	0.02	0.05	-	0.02	-	0.02	0.02	-	0.01	-	0.02
	Min	0.72	2.48	0.57	0.62	0.34	0.44	0.71	0.81	0.29	0.32	0.32
	Max	0.74	2.52	0.57	0.64	0.34	0.46	0.73	0.81	0.29	0.32	0.33
L. quadrimaculata												
♂ **(N=5)**	**Mn**	**0.97**	**3.33**	**0.53**	**0.62**	**0.31**	**0.47**	**0.79**	**3.47**	**0.41**	**0.38**	**0.49**
	SD	0.03	0.22	0.01	0.01	0.01	0.02	0.03	0.18	0.02	0.03	0.04
	Rg	0.05	0.52	0.02	0.03	0.02	0.05	0.06	0.35	0.05	0.06	0.08
	Min	0.94	3.07	0.52	0.60	0.30	0.44	0.76	3.27	0.38	0.35	0.46
	Max	0.99	3.59	0.54	0.63	0.32	0.49	0.83	3.61	0.43	0.41	0.54
♀ **(N=5)**	**Mn**	**0.79**	**2.67**	**0.51**	**0.66**	**0.37**	**0.46**	**0.76**	**0.99**	**0.32**	**0.35**	**0.34**
	SD	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.06	0.01	0.02	0.02
	Rg	0.02	0.10	0.03	0.02	0.03	0.03	0.02	0.14	0.02	0.03	0.06
	Min	0.77	2.62	0.49	0.65	0.35	0.44	0.75	0.90	0.31	0.33	0.30
	Max	0.79	2.72	0.52	0.67	0.38	0.48	0.76	1.05	0.33	0.37	0.37
Missanos												
M. gulafuscus												
♂ **(N=1)**	**Va**	**0.69**	**2.62**	**0.56**	**0.72**	**0.19**	**0.57**	**0.75**	**0.65**	**0.29**	**0.32**	**0.37**
♀ **(N=1)**	**Va**	**0.74**	**2.48**	**0.56**	**0.69**	**0.33**	**0.53**	**0.70**	**0.54**	**0.21**	**0.19**	**0.40**
Papuamiroides												
P. elongatus												
♂ **(N=2)**	**Mn**	**0.75**	**2.80**	**0.58**	**0.67**	**0.28**	**0.59**	**0.73**	**1.02**	**0.25**	**0.23**	**0.48**
	SD	0.02	0.04	0.01	0.03	0.01	0.02	0.02	0.02	0.03	0.03	-
	Rg	0.02	0.05	0.02	0.04	0.02	0.03	0.03	0.03	0.05	0.05	-
	Min	0.74	2.77	0.57	0.65	0.27	0.57	0.71	1.00	0.22	0.21	0.48
	Max	0.77	2.82	0.59	0.69	0.29	0.60	0.75	1.03	0.27	0.25	0.48
♀ **(N=2)**	**Mn**	**0.72**	**2.57**	**0.62**	**0.66**	**0.35**	**0.56**	**0.65**	**0.88**	**0.22**	**0.19**	**0.44**
	SD	0.04	0.07	0.02	0.02	0.01	0.01	0.07	0.03	0.02	0.02	0.01
	Rg	0.05	0.10	0.03	0.02	0.01	0.02	0.10	0.05	0.03	0.03	0.02
	Min	0.69	2.52	0.60	0.65	0.35	0.56	0.60	0.86	0.21	0.17	0.43
	Max	0.74	2.62	0.63	0.67	0.36	0.57	0.70	0.90	0.24	0.21	0.44
Sejanus												
S. brittoni												
♂ **(N=18)**	**Mn**	**1.11**	**2.89**	**0.45**	**0.65**	**0.23**	**0.40**	**0.91**	**0.82**	**0.40**	**0.46**	**0.42**
	SD	0.07	0.17	0.01	0.02	0.01	0.02	0.04	0.03	0.02	0.02	0.04
	Rg	0.25	0.64	0.03	0.06	0.04	0.06	0.14	0.13	0.08	0.08	0.13
	Min	0.99	2.48	0.43	0.60	0.20	0.37	0.82	0.75	0.35	0.41	0.33
	Max	1.24	3.12	0.46	0.67	0.24	0.43	0.96	0.87	0.43	0.49	0.46

TABLE 1
(Continued)

Species		Total Width	Body Length	Height Head	Width Head	Width Vertex	Length Pron	Width Pron	Ant2 Length	Length Scut	Width Scut	Length Cuneus
♀ **(N=13)**	**Mn**	**1.20**	**2.53**	**0.47**	**0.63**	**0.31**	**0.40**	**0.96**	**0.69**	**0.40**	**0.49**	**0.39**
	SD	0.05	0.10	0.01	0.01	0.01	0.01	0.04	0.03	0.01	0.02	0.02
	Rg	0.15	0.45	0.03	0.03	0.02	0.05	0.11	0.10	0.05	0.08	0.06
	Min	1.14	2.33	0.44	0.62	0.30	0.38	0.90	0.65	0.37	0.44	0.37
	Max	1.29	2.77	0.48	0.65	0.32	0.43	1.02	0.75	0.41	0.52	0.43
S. howardae												
♂ **(N=3)**	**Mn**	**0.97**	**2.16**	**0.45**	**0.66**	**0.21**	**0.40**	**0.85**	**0.75**	**0.37**	**0.46**	**0.29**
	SD	0.03	0.11	0.01	0.03	0.01	0.02	0.06	0.02	0.02	0.04	0.01
	Rg	0.05	0.20	0.02	0.06	0.02	0.03	0.13	0.03	0.03	0.06	0.02
	Min	0.94	2.03	0.44	0.63	0.21	0.38	0.78	0.73	0.35	0.41	0.29
	Max	0.99	2.23	0.46	0.69	0.22	0.41	0.90	0.76	0.38	0.48	0.30
♀ **(N=3)**	**Mn**	**1.06**	**2.18**	**0.41**	**0.57**	**0.28**	**0.39**	**0.86**	**0.69**	**0.35**	**0.42**	**0.30**
	SD	0.02	0.13	0.02	0.00	0.01	0.01	0.02	0.01	0.02	0.02	0.03
	Rg	0.05	0.25	0.03	0.01	0.02	0.02	0.03	0.02	0.03	0.05	0.05
	Min	1.04	2.08	0.40	0.56	0.27	0.38	0.84	0.68	0.33	0.40	0.29
	Max	1.09	2.33	0.43	0.57	0.29	0.40	0.87	0.70	0.37	0.44	0.33
S. palumae												
♂ **(N=2)**	**Mn**	**1.03**	**2.61**	**0.48**	**0.67**	**0.29**	**0.46**	**0.90**	**0.96**	**0.41**	**0.47**	**0.33**
	SD	0.02	0.02	-	0.01	-	-	0.01	0.01	-	0.01	-
	Rg	0.02	0.02	-	0.01	-	-	0.02	0.02	-	0.02	-
	Min	1.01	2.60	0.48	0.67	0.29	0.46	0.89	0.95	0.41	0.46	0.33
	Max	1.04	2.62	0.48	0.67	0.29	0.46	0.90	0.97	0.41	0.48	0.33
♀ **(N=3)**	**Mn**	**1.15**	**2.58**	**0.48**	**0.66**	**0.32**	**0.48**	**0.99**	**0.78**	**0.40**	**0.49**	**0.36**
	SD	0.05	0.04	-	0.01	0.01	0.02	0.03	0.03	0.02	0.01	0.01
	Rg	0.10	0.07	-	0.02	0.02	0.03	0.06	0.06	0.03	0.02	0.02
	Min	1.09	2.55	0.48	0.65	0.32	0.46	0.95	0.75	0.38	0.48	0.35
	Max	1.19	2.62	0.48	0.67	0.33	0.49	1.02	0.81	0.41	0.49	0.37
Waterhouseana												
W. delicata												
♂ **(N=3)**	**Mn**	**0.74**	**2.75**	**0.60**	**0.71**	**0.24**	**0.79**	**0.72**	**0.85**	**0.29**	**0.29**	**0.37**
	SD	-	0.04	0.01	0.01	0.02	0.01	0.01	0.01	-	0.04	-
	Rg	-	0.05	0.02	0.02	0.02	0.02	0.01	0.02	-	0.06	-
	Min	0.74	2.72	0.59	0.70	0.23	0.78	0.71	0.84	0.29	0.25	0.37
	Max	0.74	2.77	0.60	0.71	0.25	0.79	0.72	0.86	0.29	0.32	0.37

WADA Western Australia Museum Department of Agriculture, Perth

ZISP Zoological Institute, Russian Academy of Sciences, Saint Petersburg

ZMUH Zoological Museum of the University, Helsinki

CHECKLIST OF GENUS AND SPECIES-GROUP NAMES PROPOSED OR CURRENTLY USED IN LEUCOPHOROPTERINI

Valid species names "with generic placement (recognized herein)" in Leucophoropterini are listed in **boldface,** junior synonyms are indicated with an *, and species placed in other genera are in italics.

Abuyogocoris Schuh, 1984
- **abuyog** Schuh, 1984
- **calien** Schuh, 1984
- **liwo** Schuh, 1984
- **tawitawi** Schuh, 1984

Arafuramiris Schuh, 1984
- **biakanus** Schuh, 1984
- **dreikikir** Schuh, 1984
- **gressitti** Schuh, 1984
- **heath,** new species
- **jimmi** Schuh, 1984

oswaldi, new species
queenslandensis, new species
Aitkenia Carvalho and Gross, 1982
cantrelli Carvalho and Gross, 1982, see *Blesingia* Carvalho and Gross
exocarpocoris, new species
grandis Carvalho and Gross, 1982, see *Blesingia* Carvalho and Gross
latevagans Carvalho and Gross, 1982
monteithi Carvalho and Gross, 1982, see *Neaitkenia*, new genus
uptoni Carvalho and Gross, 1982, see *Neaitkenia*, new genus
Ausejanus, new genus
albisignatus (Knight, 1938) (*Idatiella*)
arvensus, new species
bournda, new species
cordatus, new species
femoralis (Carvalho and Gross, 1982) (*Sejanus*)
iris, new species
luteoelytratus (Carvalho and Gross, 1982) (*Sejanus*)
macrozonata (Carvalho and Gross, 1982) (*Leucophoroptera*)
mcdonaldi (Carvalho and Gross, 1982) (*Sejanus*)
meridionalis (Carvalho and Gross, 1982) (*Sejanus*)
minutus, new species
neboissi (Carvalho and Gross, 1982) (*Sejanus*)
schwartzi, new species
tasmaniae (Carvalho and Gross, 1982) (*Sejanus*)
tiramisu, new species
uestaustralianus (Carvalho and Gross, 1982) (*Sejanus*)
vividus (Carvalho and Gross, 1982) (*Sejanus*)
Austrodapus, new genus
nitens, new species
Biromiris Schuh, 1984
binjour, new species
bulolo Schuh, 1984
cassisi, new species
cyclops Schuh, 1984
enarotadi Schuh, 1984
scheyville, new species
Blesingia Carvalho and Gross, 1982
cantrelli (Carvalho and Gross, 1982) (*Aitkenia*)
*elegans Carvalho and Gross, 1982 = *Leucophoroptera quadrimaculata* Poppius
fasciatipennis (Poppius, 1921) (*Leucophoroptera*)
grandis (Carvalho and Gross, 1982) (*Aitkenia*)
gularis Carvalho and Gross, 1982
*latezonata Carvalho and Gross, 1982 = *Leucophoroptera quadrimaculata* Poppius
mamai (Schuh, 1984) (*Pseudoleucophoroptera*)
promeceops (Schuh, 1984) (*Pseudoleucophoroptera*)
tamborinea Carvalho and Gross, 1982
Collessicoris Carvalho and Gross, 1982
bellissimus Carvalho and Gross, 1982
Ctypomiris Schuh, 1984
brendae Schuh, 1984
kokure Schuh, 1984
solomonensis, new species
Gulacapsus Schuh, 1984
australiensis, new species
moresbyana Schuh, 1984
nondugl Schuh, 1984
novoguinensis Schuh, 1984
Johnstonsonius, new genus
phalarosus, new species
Leucophoroptera Poppius, 1921
cavenda Carvalho and Gross, 1982
fasciata Carvalho and Gross, 1982
gloriosa, new species
kangarooina, new species
fasciatipennis Poppius, 1921, see *Blesingia* Carvalho and Gross
macrozonata Carvalho and Gross, 1982, see *Ausejanus*, new genus
*nitidior Carvalho and Gross, 1982 = *quadrimaculata* Poppius, 1921
novoirlandense Schuh, 1984, see *Neoleucophoroptera*, new genus
philippinensis Schuh, 1984, see *Transleucophoroptera*, new genus
quadrimaculata Poppius, 1921
solomonensis Schuh, 1984, see *Neoleucophoroptera*, new genus
Missanos, new genus
gulafuscos, new species
Neaitkenia, new genus
monteithi (Carvalho and Gross, 1982) (*Aitkenia*)
uptoni (Carvalho and Gross, 1982) (*Aitkenia*)

Neoleucophoroptera, new genus
novoirlandense (Schuh, 1982) (Leucophoroptera)
solomonensis (Schuh, 1984) (*Leucophoroptera*)
Papuamimus Schuh, 1984
irianicus Schuh, 1984
maai Schuh, 1984
Papuamiroides, new genus
elongatus, new species
Pseudohallodapocoris Schuh, 1984
ifar Schuh, 1984
kokoda Schuh, 1984
wau Schuh, 1984
Pseudoleucophoroptera Schuh, 1984 = *Blesingia* Carvalho and Gross, 1982
mamai Schuh, 1984, see *Blesingia* Carvalho and Gross
promeceops Schuh, 1984, see *Blesingia* Carvalho and Gross
Sejanus Distant, 1912
albisignatus (Knight, 1938) see *Ausejanus*, new genus
amami Yasunaga, 2001
ansevata Schuh, 1984, see *Ausejanus,* new genus
biniguni Schuh, 1984, incertae sedis
brassi Schuh, 1984
brevinger Yasunaga, 2001
brittoni Carvalho and Gross, 1982
*brunneus Carvalho and Gross, 1982 = *Ausejanus tasmaniae* (Carvalho and Gross, 1982)
chinai (Knight, 1938) (*Idatiella*)
cinnameus Schuh, 1984
crassicornis (Poppius, 1915) (*Eosthenarus*)
ecnomioides Schuh, 1984
ecnomios Schuh, 1984
ecnomiscos Schuh, 1984
elongatus Schuh, 1984
fasciatus Carvalho and Gross, 1982, incertae sedis
femoralis Carvalho and Gross, 1982, see *Ausejanus*, new genus
fijiensis Schuh, 1984, incertae sedis
funerellus Schuh, 1984
funereus Distant, 1910
funerioides Schuh, 1984
hongkong Schuh, 1984, incertae sedis
howardae Carvalho and Gross, 1982
*intermedius Carvalho and Gross, 1982 = *Ausejanus albisignatus* (Knight, 1938)
interruptus (Reuter, 1906) (*Sthenarus*)
isarog Schuh, 1984
juglandis Yasunaga, 2001
leai Carvalho and Gross, 1982, incertae sedis
luzonicus Schuh, 1984
macer Schuh, 1984
*melaleucae Carvalho and Gross, 1982 = *Ausejanus mcdonaldi* (Carvalho and Gross, 1982)
melas Schuh, 1984
mcdonaldi Carvalho and Gross, 1982, see *Ausejanus*, new genus
meridionalis Carvalho and Gross, 1982, see *Ausejanus*, new genus
neboissi Carvalho and Gross, 1982, see *Ausejanus*, new genus
neofunereus Schuh, 1984
niveoarcuatus (Reuter, 1906) (*Sthenarus*)
novecaledonicus Schuh, 1984, incertae sedis
occidentalis Carvalho and Gross, 1982, incertae sedis
palumae Carvalho and Gross, 1982
potanini (Reuter, 1906) (*Sthenarus*)
priscillianus (Distant, 1910) (*Idiatella*)
*rosei obscurior Carvalho and Gross, 1982 = *palumae* Carvalho and Gross, 1982
*rosei rosei Carvalho and Gross, 1982 = *palumae* Carvalho and Gross, 1982
ruber Carvalho and Gross, 1982, incer tae sedis
rubricatus Carvalho and Gross, 1982, incertae sedis
serrulatus Schuh, 1984
sinuosus Schuh, 1984
spiculatus Schuh, 1984
trivinosus Carvalho and Gross, 1982, incertae sedis
uestaustralianus Carvalho and Gross, 1982, see *Ausejanus,* new genus
umi Schuh, 1984
vividus Carvalho and Gross, 1982, see *Ausejanus,* new genus
Solomonomimus Schuh, 1984
roroni Schuh, 1984
Transleucophoroptera, new genus
philippinensis (Schuh, 1984)
Trichocephalocapsus Schuh, 1984
albofasciatus Schuh, 1984
immaculatus Schuh, 1984
Waterhouseana Carvalho, 1973
delicata, new species
illustris Carvalho, 1973

SYSTEMATICS

Leucophoropterini Schuh, revised diagnosis

DIAGNOSIS: Recognized by the male with a small, C- or S-shaped endosoma composed of a simple tube or two sclerotized straps, an apical horse-collar–shaped or weakly sclerotized secondary gonopore, relatively small genital capsule less than one third the total length of the abdomen; the female genitalia with a medial vestibular sclerite of the first gonapophysis forming the anterior wall of the bursa copulatrix, a dorsal labiate plate without sclerotized portions other than the sclerotized rings, and the apex of the ovipositor with an expanded ventral notch (fig. 44C) which appears as a projecting "spine" in lateral view when ovipositor at rest in abdomen; overall coloration primarily dark brown, castaneous, or rarely red, presence of a partial or complete transverse fascia on the anterior portion of the hemelytron, and a white anterior margin of the cuneus adjacent to the cuneal fracture.

KEY TO THE GENERA OF LEUCOPHOROPTERINI

1. Less than 2.25 mm long; cuneus usually with only two white spots on anterior margin; legs relatively short and equal to or less than four times longer than the width of the metafemur; endosoma C-shaped . . . . . *Sejanus* Distant
– Greater than 2.25 mm long; cuneus never with two white spots on anterior margin, usually with white fascia, or without markings on the anterior margin; legs at least four times longer than the width of the metafemur; endosoma S-shaped 2
2. Hemelytron anteriorly (clavus and corium) always lacking a dark brown transverse fascia along posterior margin of white transverse fascia; surface of hemelytron shiny and smooth, never punctate or possessing reflective patches. . . . . ***Ausejanus*, n. gen.**
– Anterior of hemelytron (clavus and corium) with a dark brown transverse fascia along posterior margin of white transverse fascia; if lacking a dark transverse line, hemelytron punctate; hemelytron with reflective patches 3
3. Only simple setae on hemelytron 4
– Additional types of setae on hemelytron (silver to gold flattened setae, elongate, and erect, sericeous setae). 7
4. Punctation on apex of clavus adjacent to suture; lateral margin of hemelytron strongly constricted medially . . . ***Transleucophoroptera*, n. gen.**
– Clavus with punctation; lateral margin of hemelytron straight to weakly constricted medially 5
5. Femora flattened in cross section; hemelytron primarily castaneous. . . . . *Aitkenia* Carvalho and Gross
– Femora rounded in cross section; general coloration dark brown, yellowish, or pale brown 6
6. White band on anterior margin of cuneus equal in width across length; posterior of cuneus uniformly pale brown to castaneous, never dark brown or black . . . . . ***Neaitkenia*, n. gen.**
– White band on anterior margin of cuneus greater in width on lateral margin than medial margin; cuneus dark brown posteriorly. . . . . ***Neoleucophoroptera*, n. gen.**
7. Head, pronotum, and scutellum distinctly shiny; mesoscutum often partially or completely hidden under posterior margin of pronotum; sometimes possessing a white area posterior to claval suture; hemelytron with elongate, erect setae or sericeous setae; hemelytron often flat and punctate; *Ctypomiris* Group 8
– Head, pronotum, and scutellum dull; mesoscutum never completely obscured by posterior margin of pronotum; white area posterior to claval suture always absent; hemelytron with short, subadpressed gold or silver setae but never long, erect setae or sericeous setae; hemelytron never flat or punctate; *Gulacapsus* Group 18
8. Hemelytron lacking punctation, with long, thick, dark erect setae in addition to simple setae 9
– Hemelytron punctate; if possessing long, erect setae then these pale brown and relatively slender 10
9. Hemelytron with a transverse yellow band posterior to a complete anterior pale transverse fascia; lacking a pronotal carina. . . . . *Collessicoris* Carvalho and Gross
– Hemelytron lacking a transverse yellow band in association with pale transverse fascia; pronotal carina present . . . *Biromiris* Schuh
10. Partial to complete transverse fascia anteriorly on hemelytron without a dark posterior margin; mesoscutum exposed; hemelytron convex in transverse cross section; posterior portion of cuneus unicolorous with hemelytron; not possessing a pronotal collar or, if possessing a pronotal collar, broad and circling entire anterior margin of pronotum 11

– Partial to complete transverse fascia anteriorly on hemelytron with a dark posterior margin; mesoscutum hidden under posterior margin of pronotum; hemelytra flat across thorax and abdomen; posterior portion of cuneus distinctly darker than hemelytron; possessing a collar in the form of a narrow and reflexed anterior margin of the pronotum 12

11. Cuneus relatively short, less than ⅓ total length of hemelytral membrane; hemelytron with complete, pale, transverse fascia; hemelytron never with short, golden sericeous setae. . . . . *Abuyogocoris* Schuh

– Cuneus relatively long, more than ⅓ total length of membrane; hemelytron with transverse fascia limited to clavus; hemelytron with short, golden sericeous setae. . . . . ***Austrodapus*, n. gen.**

12. Lateral margin of hemelytron weakly constricted medially, width at narrowest point more than ¾ width of posterior margin of pronotum 13

– Lateral margin of hemelytron strongly constricted medially, width at narrowest point less than ¾ width of posterior margin of pronotum 14

13. Humeral angles of pronotum shoulderlike; endosoma with spines or additional processes at apex (e.g., Schuh 1984: figs. 703, 706) . . . . . *Ctypomiris* Schuh

– Humeral angles of pronotum flat. . . . . *Solomonomimus* Schuh

14. Head with ventral-posterior surface covered with dense, dark long setae 15

– Head not as above 16

15. Pronotum constricted medially, hourglass shaped . . . . . *Waterhouseana* Carvalho

– Pronotum not constricted medially, bell shaped . . . . . ***Missanos*, n. gen.**

16. Hemelytron with long sericeous setae on clavus. . . . . *Arafuramiris* Schuh

– Hemelytron lacking long sericeous setae. . . 17

17. Second antennal segment twice as long as width of head; endosoma united at apex . . . . . ***Papuamiroides*, n. gen.**

– Second antennal segment less than twice as long as width of head; endosoma separated at apex into anterior and posterior straps (e.g., Schuh 1984: fig. 721). . *Papuamimus* Schuh

18. Hemelytra elongate, and nearly parallel sided; cuneus always with greater than ½ of anterior surface white; posterior lobe of pronotum never swollen; cuneus white for greater than ½ of anterior margin; female with anterior margin of pronotum nearly equal in width to posterior margin, appearing quadrate. . . . . *Leucophoroptera* Poppius

– Hemelytra narrowed anteriorly, widening posteriorly or weakly constricted medially; posterior lobe of pronotum often swollen; cuneus rarely white for ½ of anterior margin; females with anterior margin of pronotum narrow compared to posterior margin, pronotum bell shaped. 19

19. Flattened pronotal collar absent; eyes partially obscuring anterior margin of pronotum . . . . . *Blesingia* Carvalho and Gross

– Flattened pronotal collar present; eyes parallel to or removed from anterior margin of pronotum 20

20. Eyes greater than half total height of head, parallel to anterior margin of pronotum; frons and vertex never with long, dense setae 21

– Eyes greater than half total height of head, removed from anterior margin of pronotum; frons and vertex sometimes possessing long, dense setae 22

21. Dorsal margin of metepisternum with a small white patch; vertex nearly twice width of one eye . . . . . ***Johnstonsonius*, n. gen.**

– Dorsal margin of metepisternum with an elongate white band extending ventrally to scent gland evaporatorium; vertex less than twice width of one eye. . . . . *Pseudohallodapocoris* Schuh

22. Gula elongate, not keellike; head with long, dense setae on vertex and gena; lateral margin of corium white. . . . *Trichocephalocapsus* Schuh

– Gula keellike; vertex and gena without long, dense setae; lateral margin of corium same coloration as remainder of hemelytron . . . . . *Gulacapsus* Schuh

DIAGNOSES AND DESCRIPTIONS OF GENERA AND SPECIES

Abuyogocoris Schuh
Figure 1

Abuyogocoris Schuh, 1984: 192 (n. gen., descr., disc.).

TYPE SPECIES: *Abuyogocoris abuyog* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by distinctly shiny hemelytron, head, pronotum, scutellum, and thorax; hemelytron transversely rounded and punctate, with broad and complete white to yellowish transverse fascia and large white area on the anterior margin of cuneus; cuneus small, less than ¼ total area of

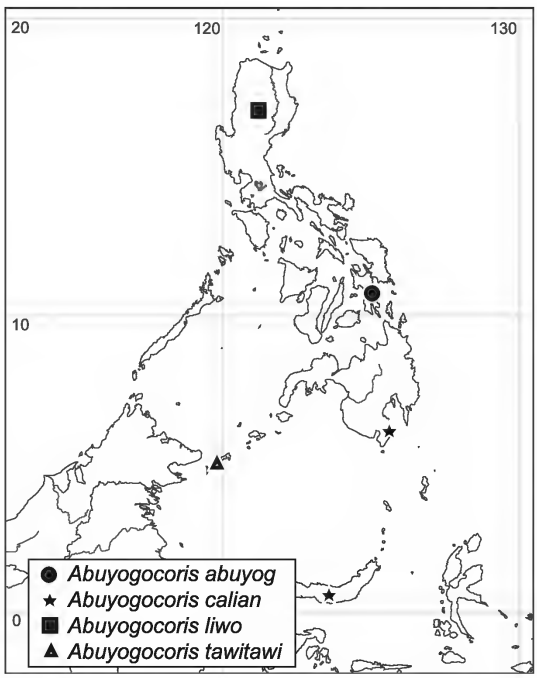

Figure 1. Distribution map of *Abuyogocoris* spp.

hemelytral membrane; long erect setae on dorsal surface and long interocular setae; broad flat pronotal collar; flat vertex and broad head; fanlike, apical, posterior process on endosoma, and broad bladelike posterior process of left paramere.

Female: Unknown, see discussion.

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands, Indonesia (fig. 1).

DISCUSSION: The four known species of *Abuyogocoris* have a variety of body types: two species have broad eyes with a narrow vertex nearly half the width of one eye and a short body (e.g., *A. abuyog, A. tawitawi*), one has a narrow vertex but elongate body, similar to *Austrodapus* (e.g., *A. liwo*), and the fourth has a wide vertex greater in width than one eye and short body (e.g., *A. calien*). However, the distinctive endosoma and left paramere, the punctate and shiny hemelytron, and the lack of sericeous setae support recognition of the genus. Two unidentified females that share the characteristics of *Abuyogocoris*, possibly representing a new species, have been examined from the Northern Territory of Australia.

Abuyogocoris abuyog Schuh
Figure 1

Abuyogocoris abuyog Schuh, 1984: 196, figs. 648–649 (n. sp., diag., descr., DV).

DIAGNOSIS: Recognized by dark brown coloration, broad yellow transverse fascia, and yellow base of abdomen.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands, Indonesia.

DISCUSSION: *Abuyogocoris abuyog* is very similar in overall morphology, size and shape to *A. tawitawi*, which Schuh (1984) separated based on slight differences in the coloration of the head and abdomen, and variation in the dimensions between the two species.

HOLOTYPE: **PHILIPPINE ISLANDS: Leyte Island:** Abuyog, 35 mi. S of Tacloban, July 9–12, 1961, P.I. Nat. Mus. and AMNH Expedition. 1♂ (AMNH).

Abuyogocoris calian Schuh
Figure 1

Abuyogocoris calian Schuh, 1984: 196, figs. 648, 654 (n. sp., diag. descr., DV).

DIAGNOSIS: Recognized by generic diagnosis, its very small size, wide vertex close to 1.25 times width of one eye, long ommatidial setae, dark castaneous coloration, and broad transverse fascia.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands, Indonesia.

DISCUSSION: One female has been associated with this species and is similar in coloration, size and structure with exception of the vertex, which is wider than in the male.

HOLOTYPE: **PHILIPPINE ISLANDS: Mindanao:** Davao Prov., Calian, June 13, C.S. Clagg. 1♂ (AMNH).

SPECIMENS EXAMINED: **INDONESIA: Sumatera Utara (North Sumatra):** Dumoga-Bone N.P., 400 m, 19 Jul 1985, Unknown, 1♂ (00354492), 1♀ (00354493) (BMNH).

Abuyogocoris liwo Schuh
Figure 1

Abuyogocoris liwo Schuh, 1984: 197, figs. 648, 655, 659–661 (n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by relatively large size, faint transverse fascia, wide posterior process of left paramere directed ventrally, and anterior process of left paramere pointing in opposite direction of posterior process.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands.

HOLOTYPE: **PHILIPPINE ISLANDS: Luzon:** Mountain Prov., Liwo, 8 km. NE of Mayoyao, 1000–1300 m., June 1–6, 1967, light trap, H.M. Torrevillas. 1♂ (BPBM) [not examined].

Abuyogocoris tawitawi Schuh
Figure 1

Abuyogocoris tawitawi Schuh, 1984: 197, figs. 648, 656, 662–664 (n. sp., diag., descr., DV, figs. head-pronotum, MG).

DIAGNOSIS: Recognized by relatively large and bulging eyes; broad yellow-white transverse fascia, yellow-brown head, castaneous coloration of hemelytron and thorax; broad posterior process of left paramere directed perpendicular to base of paramere, and anterior process of left paramere blunt and small, directed perpendicular to posterior process of left paramere.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands.

DISCUSSION: *Abuyogocoris tawitawi* is most similar in external dimensions and appearance to *A. abuyog*, but the coloration of the head and the pronotum differentiate the two. We could not compare the male genitalia of *A. tawitawi* with those of *A. abuyog* because the latter species is known only from the holotype, so was therefore not dissected.

HOLOTYPE: **PHILIPPINES: Tawitawi Group:** Lapid at Manalik Channel, 5.07°N 119.81°E, 19 Nov 1961, Noona Dan Expedition, Holotype, 1♂ (00127968) (ZMUC) [not examined].

Aitkenia Carvalho and Gross
Figures 2–3, 44A–D; plates 1, 8

Aitkenia latevagans Carvalho and Gross, 1982: 40 (n. gen., descr., disc., key to spp.).

TYPE SPECIES: *Aitkenia latevagans* Carvalho and Gross, 1982, by original designation.

REVISED DIAGNOSIS: Recognized by castaneous coloration, nearly complete to complete white transverse fascia with a dark brown posterior margin, parallel-sided lateral margins of corium, dorsoventrally flattened metafemur, and presence of only simple setae on the dorsum. Female recognized by trapezoidal to box-shaped pronotum in dorsal view with anterior margin relatively narrow compared to posterior margin, and lateral margin of hemelytron more strongly convex than in *Leucophoroptera*.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.92–2.97, width pronotum 0.89–0.90, maximum width across hemelytra 0.94–0.99. COLORATION: Brown, pale brown and castaneous. **Head:** Brown. Eyes deep red to purple. Labium brown. Antennal segment 1 golden, remaining segments dark brown. **Thorax:** Pronotum, scutellum, and thorax dark brown. Dorsolateral margin of metepisternum and scent gland with relatively narrow white band, width nearly equal one-fifth of total width of scent gland. *Legs:* Coxae brown, meso- and metacoxae sometimes gold distally. Femora brown. Pro- and mesotibiae basally dark brown, distally golden, metatibia completely dark brown and with parallel rows of dark spicules. Tarsomeres dark brown. *Hemelytra:* Pale brown to castaneous with translucent to whitish transverse fascia on anterior margin of hemelytron, most of anterior margin of corium and most of clavus excluding adjacent to claval suture, dark brown posterior margin transverses entirety of hemelytron (pl. 1). Posterolateral margins of corium reddish castaneous. Anterior margin of cuneus white with yellowish tinge on lateral margin, less than one-fifth total area of cuneus, remainder of cuneus reddish brown. **Abdomen:** Brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron with fine, golden simple setae, reflective patches medially on hemelytron and claval suture. STRUCTURE: **Head:** Clypeus sometimes visible in dorsal view, obscured by frons in anterior view or visible with clypeus surpassing frons anteriorly in dorsal view. Vertex flat and declining along posterior margin, width less than width

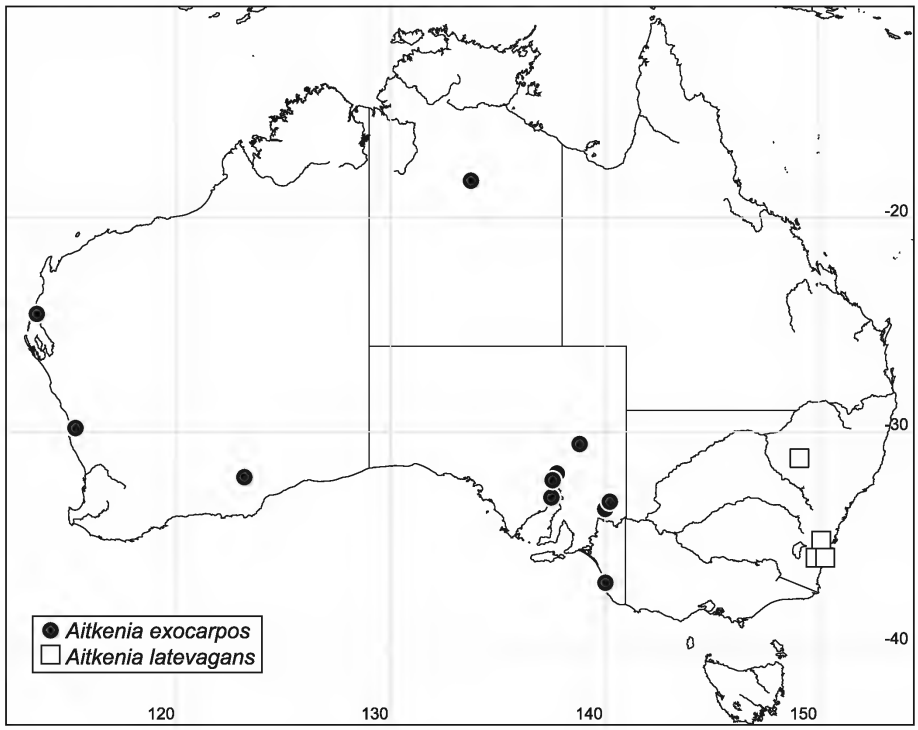

Figure 2. Distribution map of *Aitkenia* spp.

of eye. Eye height greater than 1.5 total height of head, vertex visible in lateral view anterior to anterior surface of eyes, less than or equal to ⅓ of head below eyes, posterior margin of eyes partially obscuring anterior margin of pronotum (pl. 8). Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and equal to in diameter or wider than segment 1, increasing in diameter distally toward segment 3. Length of segment 2 equal to 1.25 times total head width or short of 1.33 times head width. Segments 3 and 4 slender and less than half length of segment 2. Apex labial segment 1 extending past posterior margin of head, apex of segment 4 reaching apex of metacoxa. **Thorax:** Pronotum more than two times as wide as long, no demarcation between anterior and posterior margins laterally or dorsally, dorsal surface nearly flat, lateral margins straight forming trapezoidal appearance in dorsal view. Pronotal collar not present. Mesoscutum exposed, scutellum weakly transversely rounded. Scent gland approximately ⅓ total area of metepimeron. *Legs:* Moderate length, slender, metafemora weakly flattened dorsoventrally. Claws moderate length and width, pulvilli less than half of total claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins nearly parallel sided, dorsally transversely rounded. Cuneus triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, partial thickening on lateral margin of cuneus white. **Abdomen:** Narrow, elongate. GENITALIA: (fig. 3A–H): **Pygophore:** Small, with minute protuberance on posteroventral surface, occupying about ¼ length of abdomen, ventral margin sloping upward toward apex. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base, separating toward apex, and unified by membrane. Secondary gonopore small, weakly sclerotized (fig. 3F) or horse-collar shaped and aperture of the secondary gonopore is open in the lateral plane of the endosomal straps (fig. 3A), located at apex of endosoma. **Phallotheca:** C-shaped, apex gently tapering

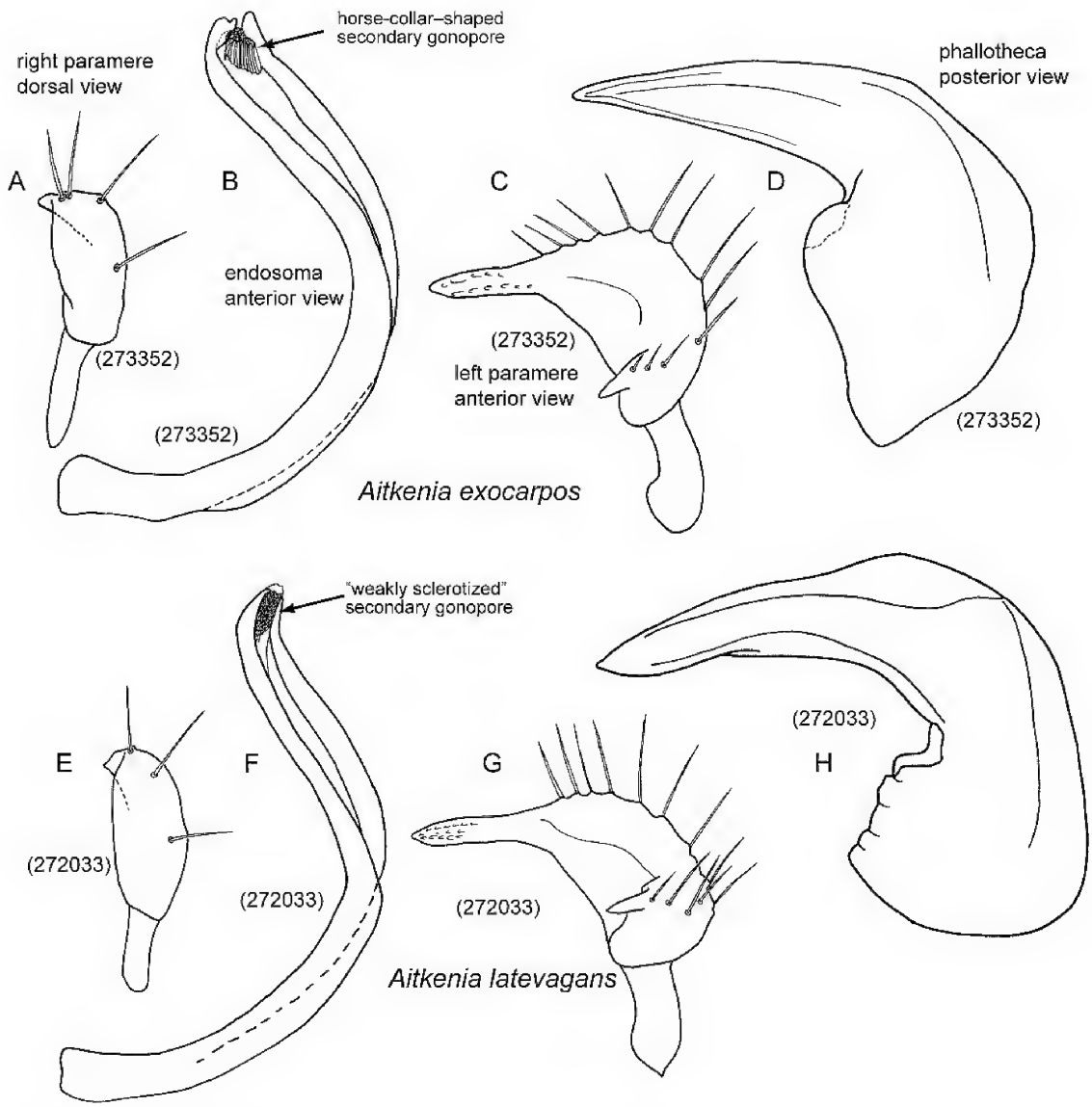

Figure 3. Male genitalia of *Aitkenia* spp., and illustration of weakly sclerotized and horse-collar–shaped secondary gonopores in Leucophoropterini (A–H).

toward point, sometimes with ridges on ventral-anterior surface (fig. 3D, H). **Right Paramere:** Moderately sized, nearly parallel sided and with tapering, pointed apex (Fig. 3A, E). **Left Paramere:** Moderately sized; posterior process slender, with sensory pits, directed perpendicular to base of paramere, relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, dorsal margin at or below greatest height of paramere body; dorsomedial surface between anterior and posterior processes rounded to nearly flat (fig. 3C, G).

Female: Macropterous, medium sized, with nearly parallel lateral margins. Total length 2.62–3.17, width pronotum 0.87–0.96, maximum width across hemelytra 0.99–1.09. COLORATION: Similar to male but much darker brown and antennal segment 2 paler brown proximally. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE:

Head: Clypeus produced, strongly exserted in dorsal view. Vertex convex, width greater than 1.5 times width of one eye. Eyes less than total height of head in lateral view. Antennal segment 2 long and more slender than segment 1 at basal joint, increasing in diameter distally to segment 3. Length antennal segment 2 ranging from just over 1.10 times total head width to less than 1.25 times total width. **Thorax:** Pronotum more than two times as wide as long, width of anterior margin nearly four-fifths total width of posterior margin to nearly equal in width. Mesoscutum exposed, scutellum weakly transversely rounded. *Hemelytra:* Lateral margins convex, dorsally transversely rounded. Cuneus shorter and wider than male, fracture angled anteromesially. **Abdomen:** Parallel sided, ventral margin sloping dorsally. Spine present on ventral surface of ovipositor (fig. 44C). Remaining characters as in male. GENITALIA (fig. 44A, B, D): Two separate triangular-shaped vestibular sclerites, internal lateral tube absent, vulva covered by apical sclerite; lateral margins of first gonapophyses sclerotized between dorsal and ventral labiate plates; sclerotized rings weakly sclerotized (fig. 44D). Posterior wall mostly membranous, posterior margin sclerotized and possessing flat medial invagination (fig. 44A), lateral region of interramal sclerite sclerotized (fig. 44B).

HOSTS: Primarily Santalaceae and Casuarinaceae, but also found on Asteraceae (*Olearia* sp.).

DISTRIBUTION: Australia.

DISCUSSION: The original description of *Aitkenia* was extremely vague and essentially uninformative, indicating only that the taxon could be distinguished from species that we place in *Ausejanus* by the relatively narrow vertex, the tendency for the antennal segment 2 to be somewhat flattened, the more narrow anterior margin of the pronotum, and a slight medial constriction of the hemelytron in dorsal view (Carvalho and Gross 1982). These attributes characterize several other genera besides *Aitkenia*. The species of *Aitkenia* which demonstrate the aforementioned characters most strongly now belong in *Blesingia* (e.g., *Blesingia cantrelli* (Carvalho and Gross); see treatment of *Blesingia* below).

Aitkenia exocarpos, new species
Figures 2, 3A–D, 44A–D; plates 1, 8

DIAGNOSIS: Recognized by relatively elongate head as compared to *A. latevagans,* with at least ¼ total height of head below eyes, wider margin of white along dorsolateral margin of metepisternum extending ventrally to lateral margin of scent gland, and genitalic structure. Female recognized by more strongly quadrate pronotum compared to *A. latevagans.*

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.97, width pronotum 0.84, maximum width across hemelytra 0.99. COLORATION: Dorsolateral margin metepisternum and scent gland with narrow white band extending into anterolateral margins, width equal to about one-fifth of total width of scent gland. STRUCTURE: Anterior margin of frons surpasses anterior margin of clypeus, obscuring clypeus in dorsal view, area of head below eyes greater than ¼ total height of head (pl. 8). GENITALIA: (fig. 3A–D) **Endosoma:** Apex relatively broad, secondary gonopore horse-collar shaped in dorsal view (fig. 3B). **Phallotheca**: Ventral-anterior surface smooth, lacking ridges (fig. 3D). **Left Paramere:** Dorsal medial surface rounded.

Female: Macropterous, medium sized, with nearly parallel lateral margins. Total length 2.57–2.82, width pronotum 0.83–0.94, maximum width across hemelytra 0.91–1.03. STRUCTURE: Vertex takes up greater than half total head width. Length antennal segment 2 greater than 1.10 times head width. Hemelytral margins weakly constricted medially. COLORATION: Same as male except transverse fascia more opaque white versus nearly transparent in male.

ETYMOLOGY: Named for the genus of plant on which this species was collected.

HOSTS: Primarily *Exocarpos* sp. (Santalaceae); also sporadically found on Fabaceae and Asteraceae.

DISTRIBUTION: Central and Western Australia (fig. 2).

DISCUSSION: Only two males were found for this species and both are teneral; however, the relatively narrow area of the head below the eyes as compared to the type species, *A. latevagans,* confirms that it represents a different taxon. Furthermore, associated

females have a more trapezoidal pronotum as compared to females of *A. latevagans,* whose anterior margin is closer in width to the posterior margin. Lastly, this species appears to be host specific to *Casuarina cunninghamiana*, unlike *A. latevagans,* where males and females were collected in large numbers on Santalaceae.

HOLOTYPE: **AUSTRALIA: South Australia:** 5 km SW of Whyalla, 33.05085°S 137.5004°E, 30 m, 21 Oct 1996, Schuh and Cassis, *Exocarpos aphyllus* R.Br. (Santalaceae), det. PERTH staff PERTH 05056209, 1♂ (00273352) (SAMA).

PARATYPES: **AUSTRALIA: Northern Territory:** Renner Springs, 27 Nov 1972, D.H. Colless, 1♂ (00168816) (ANIC). **South Australia:** 5 km SW of Whyalla, 33.05085°S 137.5004°E, 30 m, 21 Oct 1996, Schuh and Cassis, *Exocarpos aphyllus* R.Br. (Santalaceae), det. PERTH staff PERTH 05056209, 1♀ (00393279) (ANIC), 1♀ (00393280) (SAMA), 1♂ (00393281) (USNM). 20 km W of Nepabunna, Mt. Serle, 30.55365°S 138.8304°E, 630 m, 07 Nov 1998, Schuh, Cassis, Silveira, *Acacia victoriae* Benth. (Fabaceae), det. Det: Royal Bot Gard. NSW NSW427617, 1♀ (00393287) *Exocarpos aphyllus* R. Br. (Santalaceae), det. Det: Royal Bot Gard. NSW NSW427339, 6♀ (00393282–00393286, 00393288) (AM), 1♀ (00393289) (TAMU). 28.8 km N of Port Augusta on Stuart Hiway, 32.26667°S 137.5692°E, 77 m, 19 Oct 2001, Cassis, Silveira, Wall, *Exocarpos aphyllus* R.Br. (Santalaceae), det. NSW staff NSW658282, 2♂ (00274793, 00274795), 1♀ (00274792) (AM), 1♂ (00274794) (UNSW). 75 km NW of Morgan, 5 km N Cane Grass, 33.53334°S 140.05°E, 100 m, 02 Nov 1995, Schuh, Cassis, and Gross, *Exocarpos aphyllus* R. Br. (Thymelaeaceae), det. B.M. Wiecek 1996 NSW 395968, 1♀ (00393278) (AM). 96 km NW of Morgan, Pine Valley Stn, 33.31667°S 140.2°E, 150 m, 02 Nov 1995, Schuh, Cassis, and Gross, *Exocarpos aphyllus* R. Br. (Santalaceae), det. B.M. Wiecek 1996 NSW 395968, 9♀ (00273339–00273343, 00273348–00273351) (AMNH). Mt Serle district (near Gammon Ranges National Park), 30.55001°S 138.837°E, 567 m, 08 Nov 2001, Cassis, Schuh, Schwartz, *Exocarpos aphyllus* R.Br. (Santalaceae), det. NSW staff NSW666360, 2♀ (00371774, 00371775) (AMNH), 1♀ (00371773) (TAMU). Tea Tree Swamp, 6 mi W of Warooka, 27 Jan 1962, P. Aitken, 1♂ (00169262) (SAMA). Wilochcreek, 60 km N Port-Augusta, 31.95°S 137.76666°E, 30 Apr 1978, V.I. Tobias, 1♂ (00229519) (ZISP). **Western Australia:** Blowholes Rd NW of North West Coastal Hiway, Beagle Hill Area, 24.49068°S 113.4626°E, 20 m, 27 Oct 2004, Cassis, Wall, Weirauch, Tatarnic, Symonds, *Exocarpos aphyllus* R.Br. (Santalaceae), det. PERTH staff PERTH 6988741, 1♀ (00195999) (WAMP). Eneabba on Brand Hiway, 29.80735°S 115.2699°E, 100 m, 31 Oct 1996, Schuh and Cassis, *Exocarpos* sp. (Santalaceae), 1♀ (00088827) (UNSW), *Exocarpos* sp. (Santalaceae), 1♀ (00088826) (WAMP). Newman Rocks, 136.5 km E of Norseman, 32.11084°S 123.1704°E, 250 m, 22 Oct 1996, Schuh and Cassis, *Olearia* sp. (Asteraceae), det. PERTH staff PERTH 05095050, 1♀ (00272182) (USNM).

Aitkenia latevagans Carvalho and Gross
Figures 2, 3E–H; plates 1, 8

Aitkenia latevagans Carvalho and Gross, 1982: 41, figs. 59–62, 118A (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Recognized by castaneous coloration, nearly complete white transverse fascia with a dark brown posterior margin (pl. 1), lateral margins of corium parallel sided, dorsoventrally flattened metafemur, and shape of left paramere. Female recognized by trapezoidal-shaped pronotum in dorsal view with anterior margin relatively narrow compared to posterior margin.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.92–2.97, width pronotum 0.89–0.90, maximum width across hemelytra 0.94–0.99. COLORATION: Dorsolateral margin of metepisternum with relatively narrow white band not extending to lateral margin of scent gland, width equal to about one-eighth of total width of metepisternum (pl. 8). Remaining characters as in generic description. STRUCTURE: Anterior margin of clypeus surpasses anterior margin of frons, clypeus visible in anterior view. Less than ⅓ of total height of head below eyes (pl. 8). GENITALIA (fig. 3E–H): Pygophore tapering dorsally toward apex with very small protrusion on

ventral-posterior surface. **Endosoma:** Apex relatively narrow, secondary gonopore weakly sclerotized and not horse-collar shaped (fig. 3F). **Phallotheca:** Anterior-ventral margin with ridges (fig. 3H). **Left Paramere:** Dorsomedial margin nearly flat between anterior and posterior process (fig. 3G).

Female: Macropterous, medium sized, with nearly parallel lateral margins. Total length 2.62–3.17, width pronotum 0.87–0.96, maximum width across hemelytra 0.99–1.09. STRUCTURE: Vertex half of total head width. Length antennal segment 2 over 1.25 times total head width. COLORATION: Dark brown dominant color rather than castaneous as in male, antennal segment 2 proximally pale in some specimens. White margin of dorsolateral margin of metepisternum extending ventrally to base of scent gland, unlike male.

HOSTS: Casuarinaceae, specifically *Casuarina cunninghamiana* Miq.

DISTRIBUTION: New South Wales (fig. 2).

DISCUSSION: Carvalho and Gross (1982) described this species based on a specimen from the Australian Capital Territory and illustrated the genitalia from a Northern Territory specimen, which they did not designate as a paratype due to the high variability they observed for this species. Based on subsequent investigation of the specimen used for the illustrations, the second specimen is in fact a specimen of *Aitkenia exocarpos*. The male genitalia are therefore redrawn for this species (fig. 3E–H).

HOLOTYPE: **AUSTRALIA**: Australian Capital Territory: Cotter River, 7.xii.1962, D.K. McAlpine. 1♂ (ANIC).

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** 43 km SE of Braidwood, Deua National Park, Deua River, 35.76339°S 149.92323°E, 100 m, 10 Nov 1995, Schuh and Cassis, (Casuarinaceae), 2♀ (00088899, 00088900) (AM). Bateman's Bay, 35.71475°S 150.1839°E, 2 m, 21 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Casuarina glauca* Sieber ex Spreng. (Casuarinaceae), det. NSW staff NSW658209, 1♀ (00272788) (AMNH). Warrumbungle National Park, Wambelong Campground, 31.21666°S 149.08333°E, 550 m, 25 Oct 1995, Schuh and Cassis, *Casuarina cunninghamiana subsp. cunninghamiana* Miq. (Casuarinaceae), det. R.G. Coveny 1996 NSW 395933, 4♀ (00275380–00275383) (AM), *Casuarina cunninghamiana subsp. cunninghamiana* Miq. (Casuarinaceae), det. R.G. Coveny 1996 NSW 395933, 2♂ (00272033, 00272034), 17♀ (00272037–00272053) (AMNH). Yadboro State Forest, Castle Campground, 35.22°S 150.1°E, 20 Jan 1994, G. Cassis, *Casuarina cunninghamiana* Miq. (Casuarinaceae), 5♀ (00371957–00371961) (AM).

Arafuramiris Schuh
Figures 4, 5, 44A–G; plate 1

Arafuramiris Schuh, 1984: 199 (n. gen., diag., descr.).

TYPE SPECIES: *Arafuramiris biakanus* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by large eyes, flat to convex vertex, strong medially constricted pronotum with posterior lobe strongly swollen and completely obscuring mesoscutum in dorsal view, presence of long sericeous setae on anterior of clavus, short and golden sericeous setae covering rest of punctate hemelytron, castaneous coloration, metafemora with kneelike swellings at joint with metatibia, longer than wide abdominal sternite 1 and overall petiolate form of abdomen, presence of striated area on abdomen visible in scanning electron microscopy, and form of male genitalia.

REDESCRIPTION: *Male*: Macropterous, small sized, and medially constricted. Total length 2.82–3.71, width pronotum 0.92–1.08, maximum width across hemelytra 0.79–1.09. COLORATION: Brown and castaneous. **Head:** Castaneous. Eyes silver. Labium golden anteriorly dark brown distally. Antennal segment 1 golden, segment 2 golden basally and pale brown distally, segment 3 golden, segment 4 golden basally and dark brown distally. **Thorax:** Pronotum, scutellum, and thorax mostly dark brown to castaneous. Dorsal margin of metepisternum and scent gland continuous in coloration with remainder of thoracic pleuron. *Legs:* All coxae basally dark brown distally golden, procoxae with most of area dark brown. All femora brown, sometimes paler brown on ventral surface, metafemora can be darker brown. All tibiae dark brown basally and golden distally, metatibia possessing two parallel rows of dark spicules. Basal tarsomeres

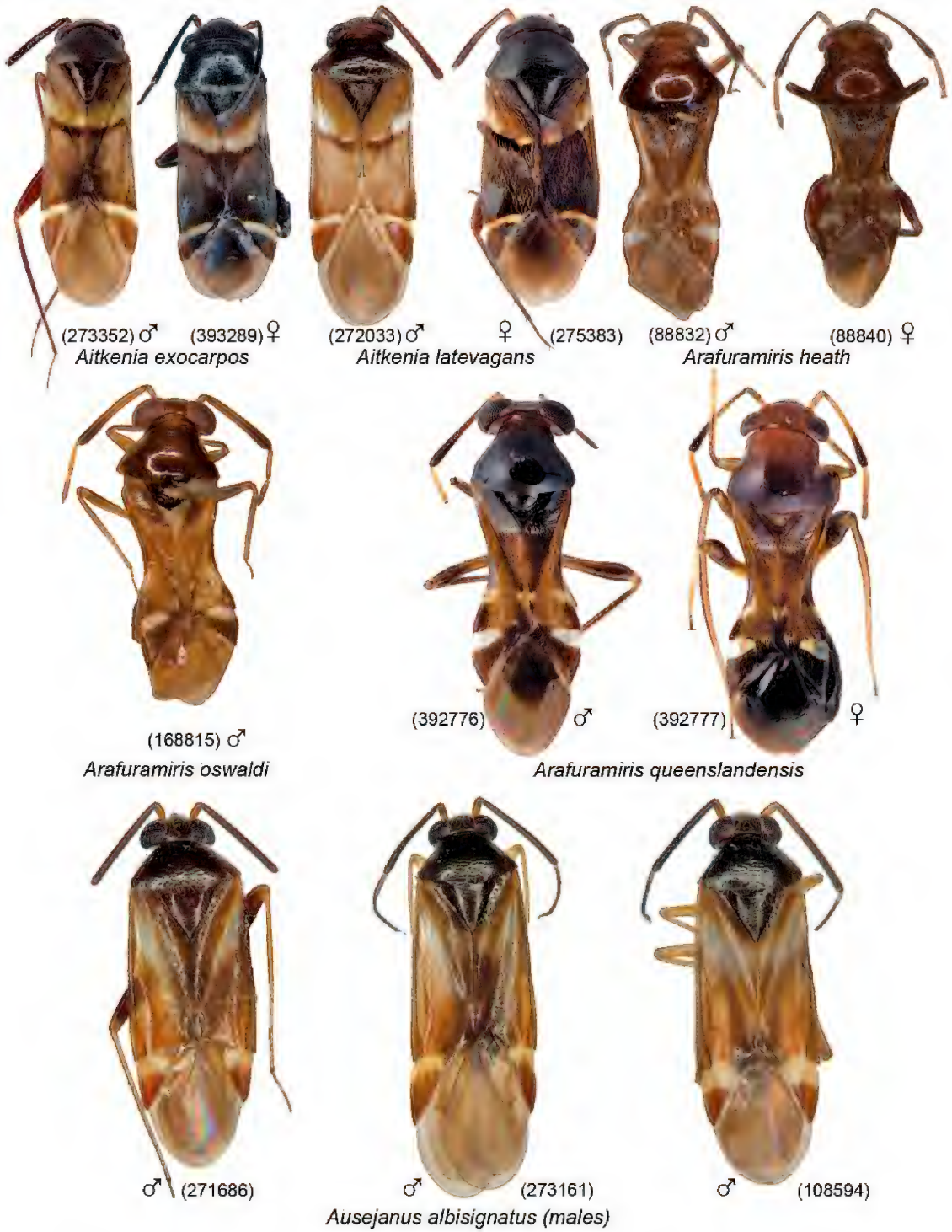

Plate 1. Dorsal habitus photos of *Aitkenia* spp., *Arafuramiris* spp., and *Ausejanus* spp.

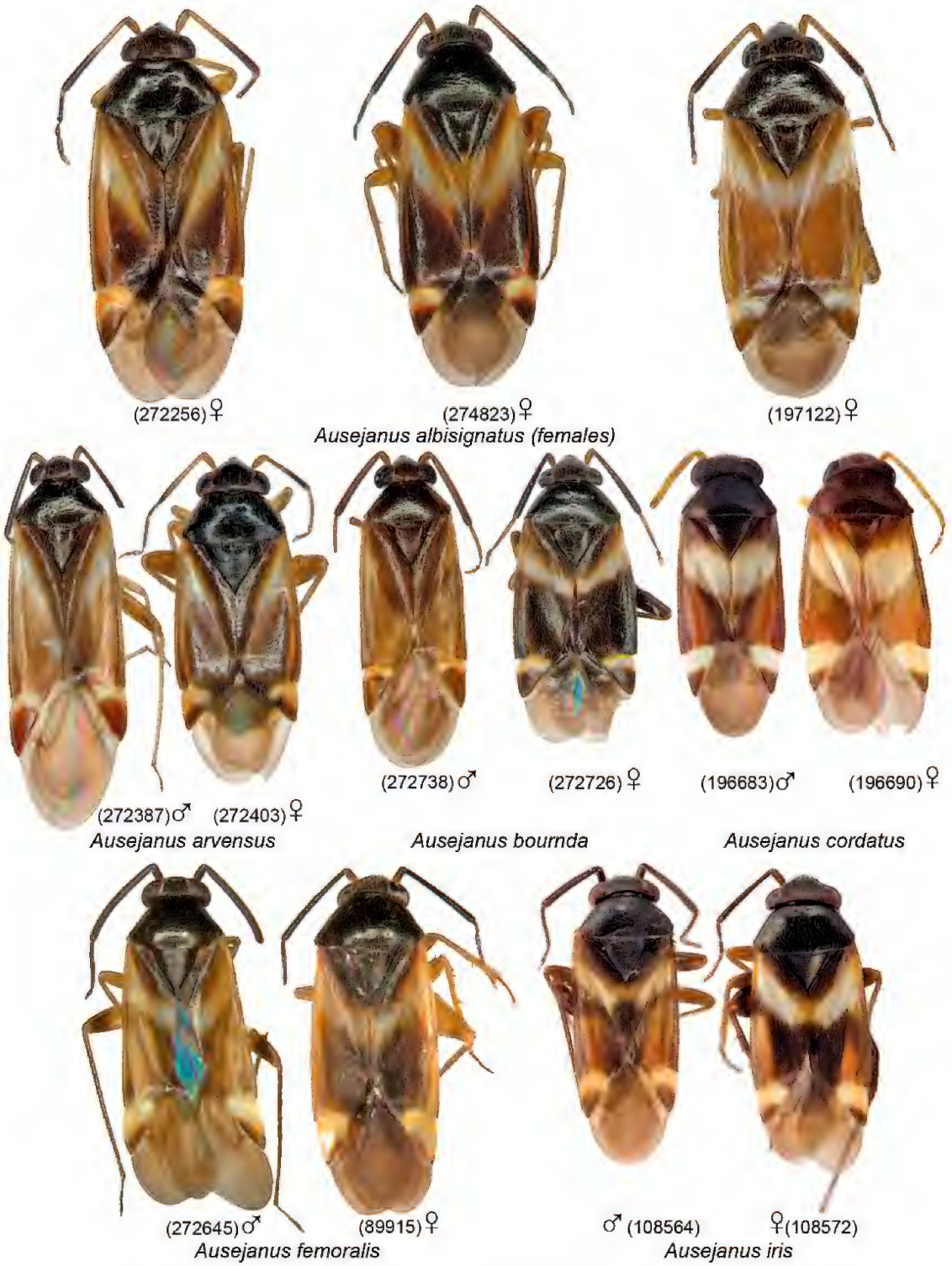

Plate 2. Dorsal habitus photos of *Ausejanus* spp.

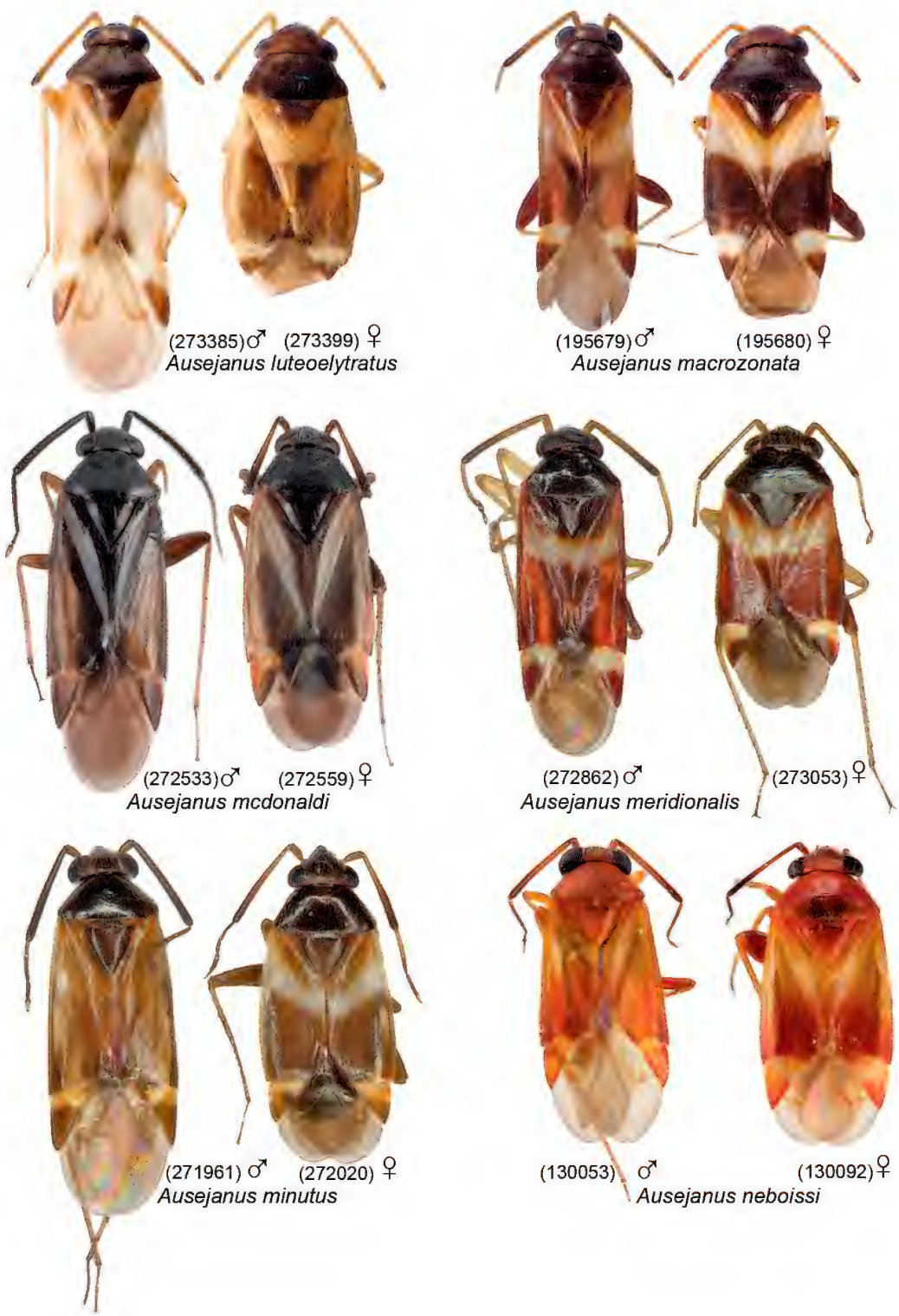

Plate 3. Dorsal habitus photos of *Ausejanus* spp.

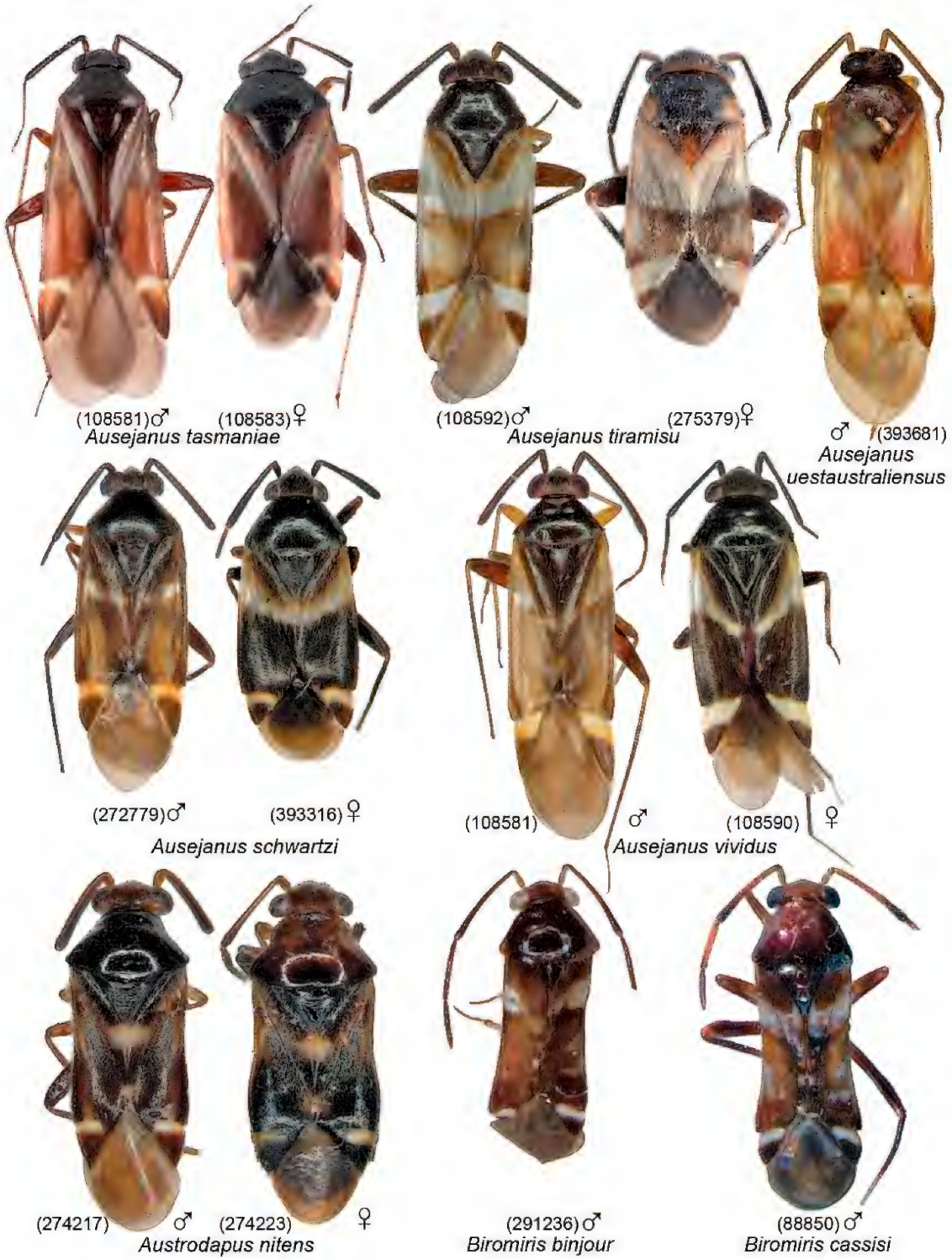

Plate 4. Dorsal habitus photos of *Ausejanus* spp., *Austrodapus* spp., and *Biromiris* spp.

Plate 5. Dorsal habitus photos of *Biromiris* spp., *Blesingia* spp., *Collessicoris* spp., and *Ctypomiris* spp. Image of *Blesingia cantrelli* is of the holotype (courtesy of the Queensland Museum).

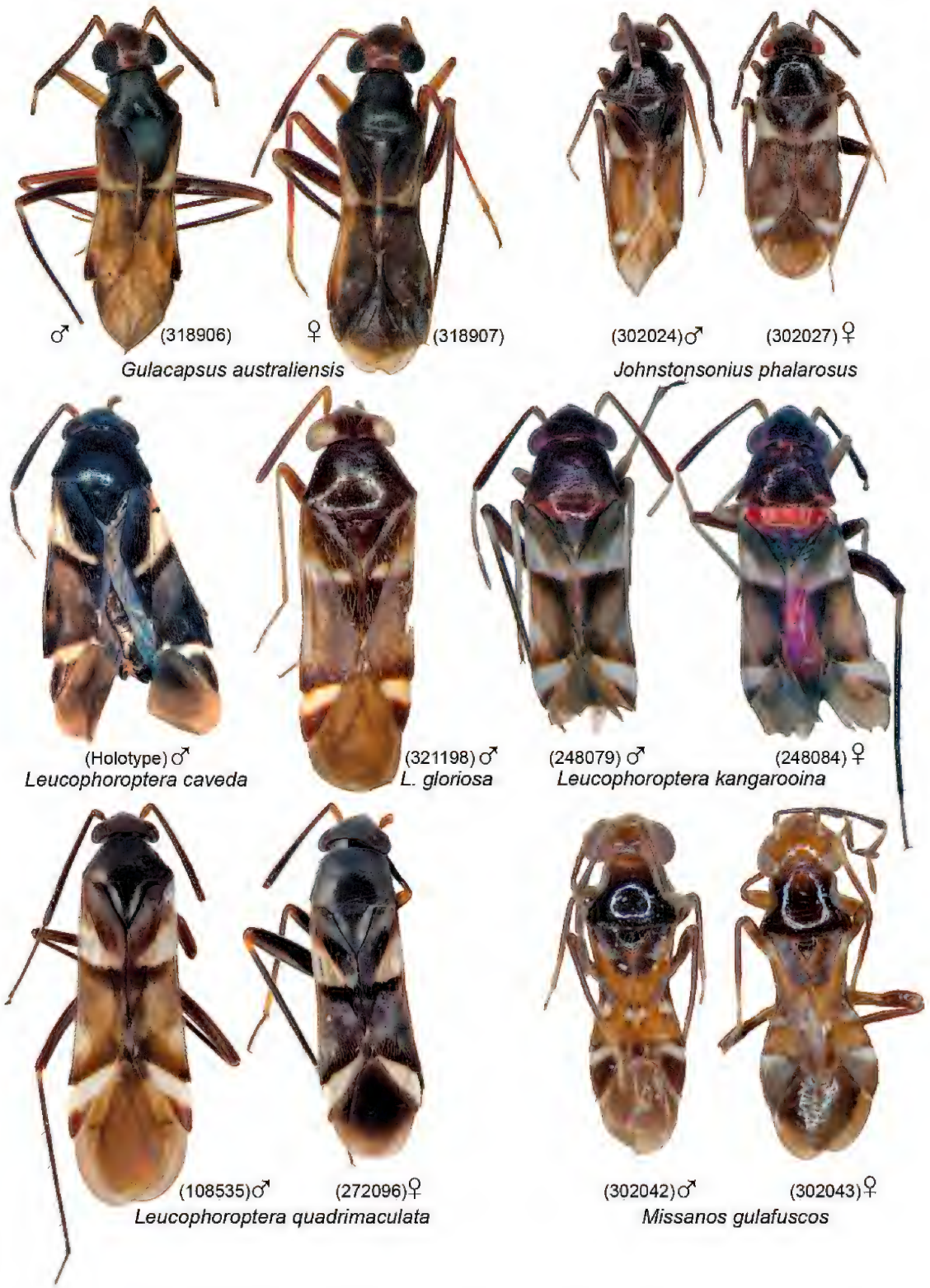

Plate 6. Dorsal habitus photos of *Gulacapsus* spp., *Johnstonsonius* spp., *Leucophoroptera* spp., and *Missanos* spp. Image of *Leucophoroptera cavenda* is of the holotype. (Image of *L. cavenda* is courtesy of the South Australian Museum).

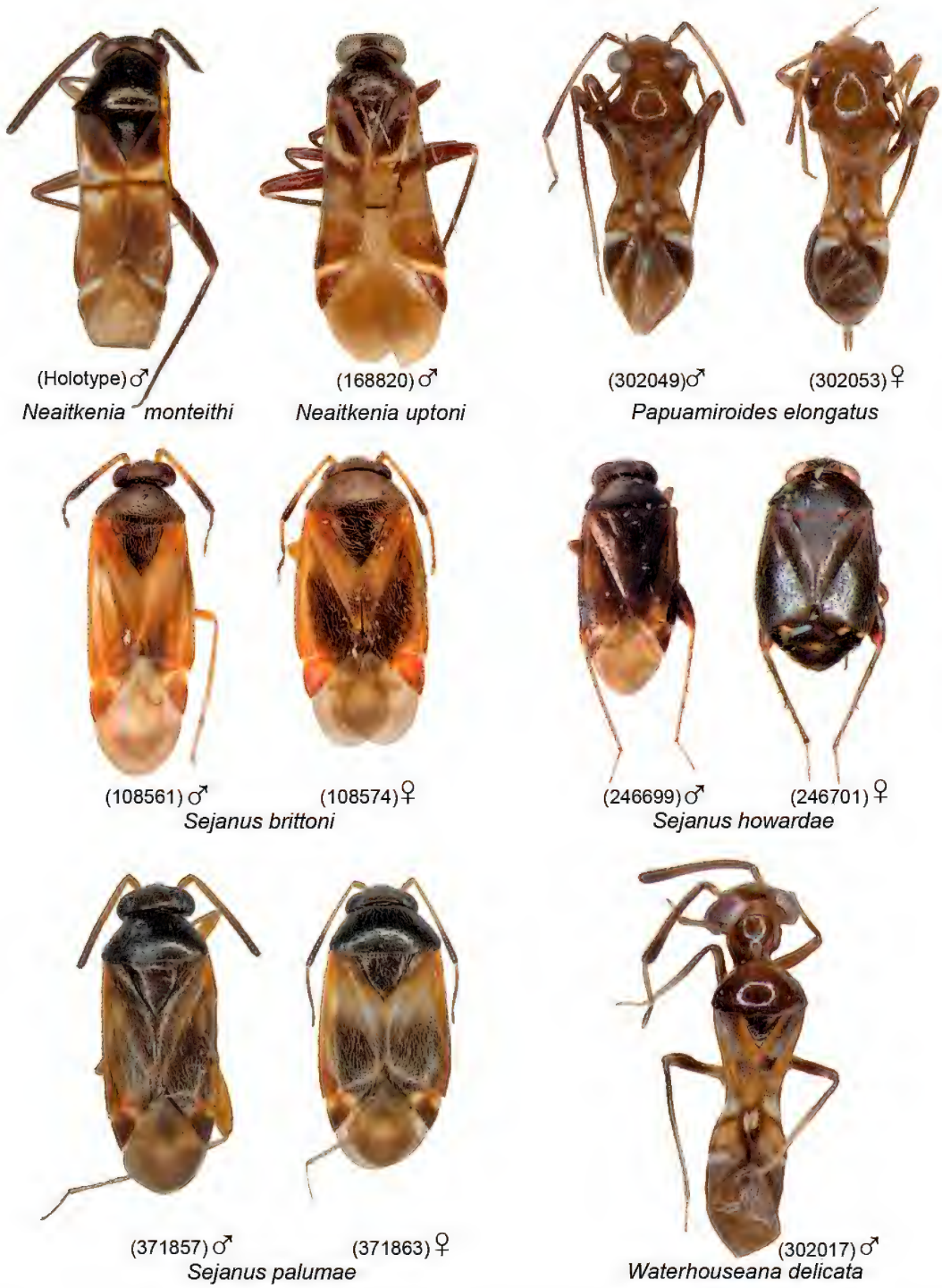

Plate 7. Dorsal habitus photos of species of *Neaitkenia* spp., *Papuamiroides* spp., *Sejanus* spp., and *Waterhouseana* spp.

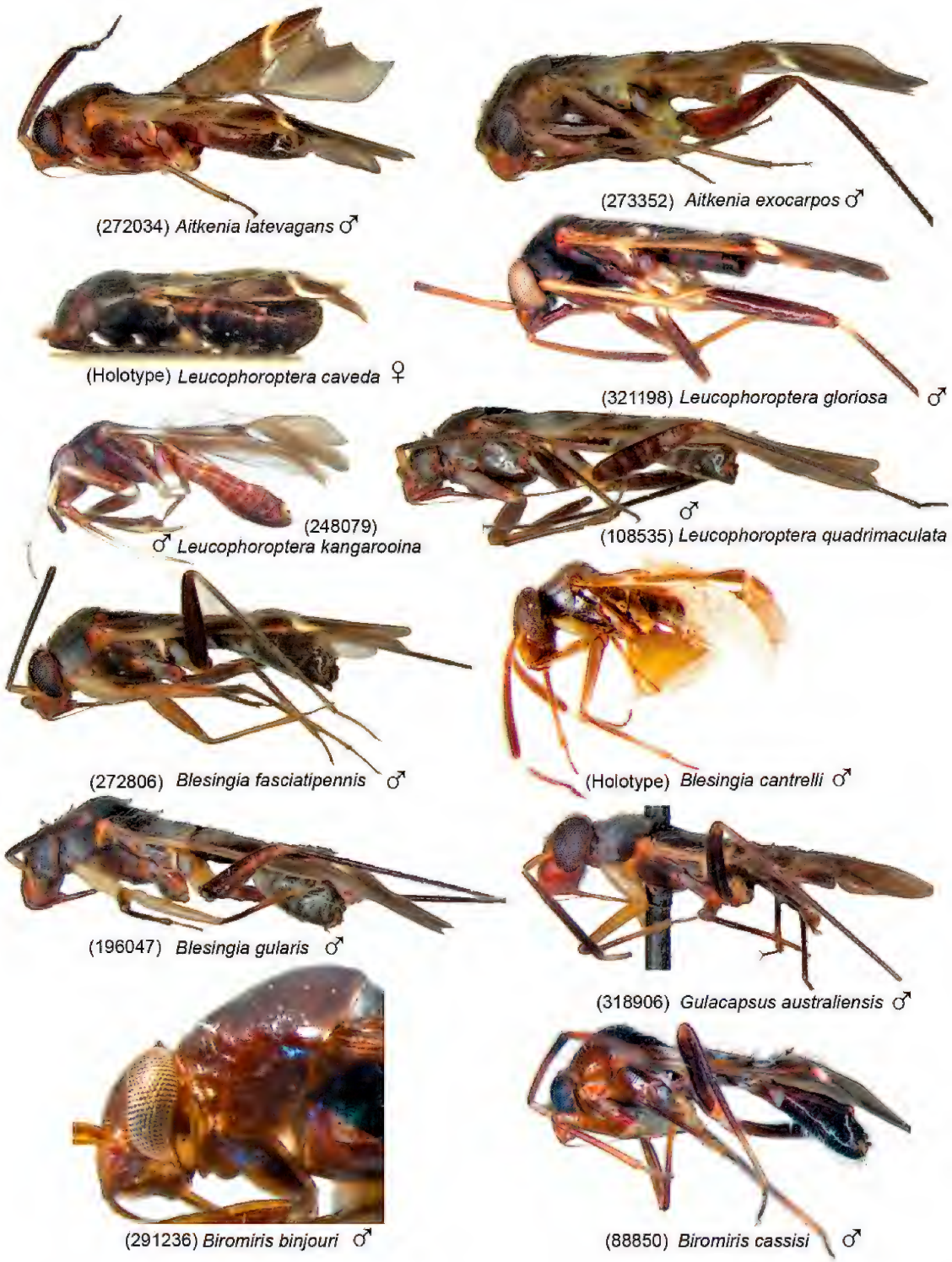
(272034) Aitkenia latevagans ♂
(273352) Aitkenia exocarpos ♂
(Holotype) Leucophoroptera caveda ♀
(321198) Leucophoroptera gloriosa ♂
(248079) ♂ Leucophoroptera kangarooina
♂ (108535) Leucophoroptera quadrimaculata
(272806) Blesingia fasciatipennis ♂
(Holotype) Blesingia cantrelli ♂
(196047) Blesingia gularis ♂
(318906) Gulacapsus australiensis ♂
(291236) Biromiris binjouri ♂
(88850) Biromiris cassisi ♂

Plate 8. Lateral views of *Aitkenia* spp., *Leucophoroptera* spp., *Blesingia* spp., *Gulacapsus* spp., and *Biromiris* spp. (Images of *Blesingia cantrelli* are of the holotype, courtesy of the Queensland Museum).

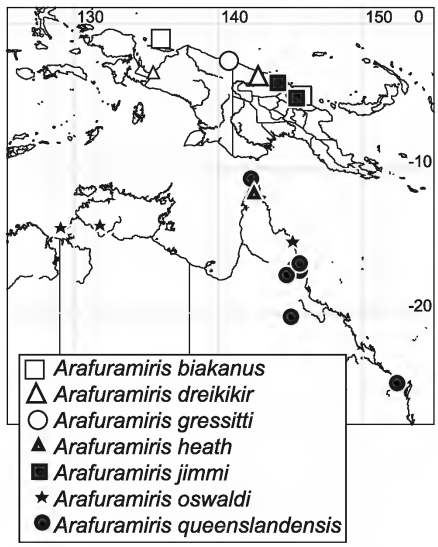

Figure 4. Distribution map of *Arafuramiris* spp.

golden, distally dark brown. *Hemelytra:* Pale brown, with anterior margin of clavus abutting scutellum darker, chocolate brown. Posterolateral margins of corium distally dark brown with small transparent areas situated at level with posterior apex of claval suture. Anterior margins of cuneus posterior to cuneal fracture mostly transparent with interior margin lateral to cuneus pigmented yellowish white, posterior portion of cuneus dark brown (pl. 1). Membrane dark brown with weak brown pigmentation along wing veins. **Abdomen:** Dark brown, abdominal segments 3 and 4 paler brown to white. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with long, erect pale brown setae, hemelytron punctate and also possessing short and golden metallic across surface and patch of long, sericeous setae on anterior portion of clavus and in small patch posterior to apex of claval commissure. STRUCTURE: **Head:** Clypeus anterior to anterior margin of frons or flush with frons in lateral view, either visible in dorsal view or hidden, frons convex to flat. Cyberial muscle attachment sites visible on frons. Vertex flat or concave, with posterior margin raised for medial half and lateral margins declining, forming shelflike appearance, width equivalent to approximately half total width of one eye to two times width of one eye. Eyes weakly to strongly removed from anterior margin of vertex, vertex hidden or visible in lateral view by anterior surface of eyes, and eyes greater than ¾ total height of head in lateral view to total height of head, posterior margin of eyes obscure anterior margin of pronotum. Gula obsolete. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head, segment 2 long and wider in diameter than segment 1, increasing in diameter distally toward segment 3 and total length nearly equal to head width to 1.33 times total width head, weakly curving medially, segments 3 and 4 equal in width to base segment 2, less than half length of segment 2. Labrum narrow. Labial segment 1 apex past posterior margin of head, apex of segment 4 extending past procoxae to nearly reaching mesocoxae. **Thorax:** Pronotum greater than ⅔ as long as wide, dorsal surface flat along anterior lobe, swollen dorsally and convex on posterior lobe of pronotum, with dorsal indentation separating anterior and posterior lobes, dorsal lateral margins narrowed anteriorly and widening distally forming bell-shaped pronotum in dorsal view, length of anterior portion of pronotum well differentiated from posterior lobe and varying in length. Narrow and reflexed pronotal collar present. Mesoscutum hidden by posterior margin of pronotum, scutellum swollen medially and anteriorly posterior margin of pronotum. Scent gland less than ⅓ total area of metepimeron. *Legs:* Elongate, narrow, metafemur widening in diameter distally anterior to joint to metatibia forming kneelike appearance. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Elongate, lateral margins strongly constricted medially, anterolateral margins narrower than posterior lateral margins or vise versa, hemelytra flat. R+M vein terminating early near median of hemelytron. Cuneus narrow, triangular, with lateral margins weakly curving convexly, length greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. **Abdomen:** Narrow for most of length, expanding in diameter to pygophore to form petiolate shape, abdominal sternite 1 longer than wide. GENITALIA: **Pygophore**: Small, less than

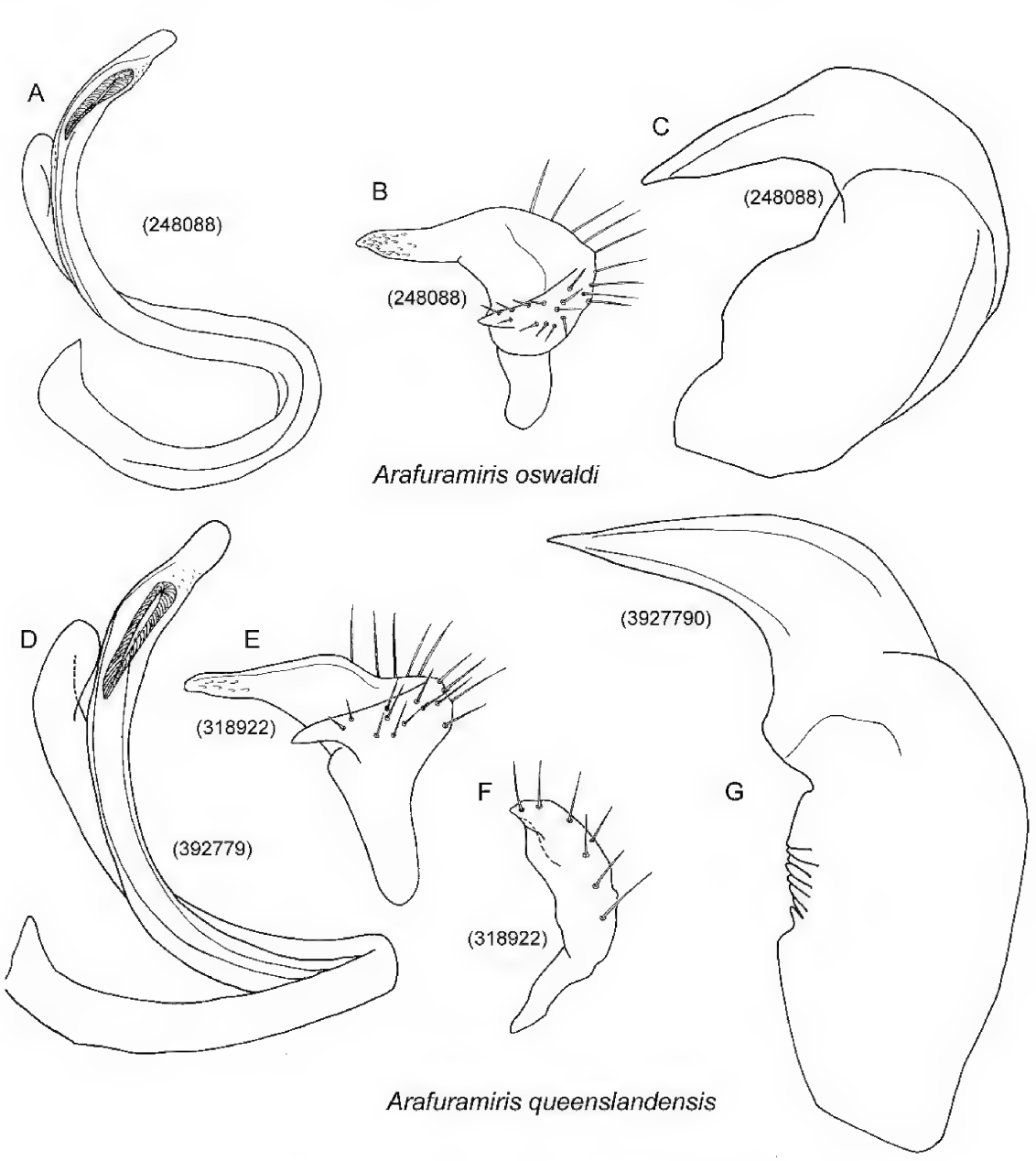

Figure 5. Male genitalia of *Arafuramiris* spp (A–G).

one-fifth total length of abdomen, without elaborations, ventral surface nearly parallel to anterior surface. **Endosoma:** Relatively small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex into two separate processes, posterior process angled in different direction from anterior process, anterior process with horse-collar shaped secondary gonopore located subapically (fig. 5A, E). **Phallotheca:** Apex broadly tapering toward point, main body elongate and nearly perpendicular to apex forming an L shape (fig. 5D) or curved relative to apex forming C shape (fig. 5G), sometimes with ridges on anterior margin of posterior process. **Right Paramere:** Moderately sized, smaller than left paramere, relatively

elongate, and nearly parallel sided (fig. 5C). **Left Paramere:** Moderately sized; posterior process of intermediate width to wide, with sensory pits, and gently curving ventrally; anterior process stout but without sensory pits on interior margin, dorsal surface of anterior process near median of total height of paramere (fig. 5F) to nearly equal in height to dorsal surface of posterior process (fig. 5B); dorsomedial margin between anterior and posterior processes either rounded (fig. 5F, Schuh 1984: fig. 677) or with dorsal surface of posterior process raised relative to median of two processes forming convex margin (fig. 5B).

Female: Macropterous, small, medially constricted. Total length 2.67–3.12, width pronotum 0.89–0.99, maximum width across hemelytra 0.84–1.03. COLORATION: Primarily castaneous, similar patterning as in male except segment 2 more yellow basally, segment 3 distally dark brown, segment 4 mostly dark brown, and abdomen darker brown than head and thorax. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: Clypeus extending past anterior margin of frons, weakly visible in dorsal view, frons more convex than in male. Vertex convex, nearly two times width of one eye to two times width, eyes not total height of head in lateral view. Length of antennal segment 2 nearly equal to total head width. Abdomen petiolate, anterior half posterior from thorax sharply declining ventrally in lateral view and constricted relative to posterior half in dorsal view, posterior half of abdomen sloping dorsally. Lateral margins of abdomen sometimes wider than lateral margins of hemelytron. Spine absent on ventral surface of ovipositor. Ovipositor spine absent. Remaining characters as in male. GENITALIA (fig. 44E–G): First gonapophyses with two relatively large, separate, triangular-shaped sclerotized vestibular plates, no visible lateral tube, but with relatively broad apical sclerite covering vulva (fig. 44E): lateral margins of first gonapophyses sclerotized between dorsal and ventral labiate plates; sclerotized rings weakly sclerotized (fig. 44E). Posterior wall mostly membranous, with posterior margin sclerotized and possessing an additionally sclerotized medial plate (fig. 44F) forming medial projection in posterior view (fig. 44G). Lateral areas of interramal sclerite sclerotized (fig. 44F).

HOSTS: Cupressaceae and Euphorbiaceae.

DISTRIBUTION: Papua New Guinea, Northern Australia (Northern Territory, Queensland) (fig. 4).

DISCUSSION: *Arafuramiris is* relatively easy to recognize due to the possession of the long sericeous setae on the clavus, which are not present in any other Leucophoropterini. Previously only described from the Indo-Pacific, three new species are here described from Northern Australia.

Arafuramiris biakanus Schuh
Figure 4

Arafuramiris biakanus Schuh, 1984: 202, figs. 665, 666, 676–678 (n. sp., diag., descr., DV, figs. head-pronotum, MG).

DIAGNOSIS: Recognized by characters in generic diagnosis, relatively small eyes that take up only ¾ total height of head in lateral view, width of vertex at least two times width of one eye, lateral margins of abdomen in female wider than lateral margins of abdomen, and indentation and clear differentiation between anterior and posterior lobes of pronotum.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: We were able to examine recently collected specimens of this species from Papua New Guinea, confirming that the shape of the head and eyes are distinctive compared to all other species of *Arafuramiris*. Most species of *Arafuramiris* have the eyes dominating the dorsal and lateral surfaces of the head, whereas in *A. biakanus* the vertex dominates the head.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Bulolo, 282 m., August 13, 1956, E.J. Ford, Jr. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Biak Island:** Biak Island: Strand, 0.99783°S 135.98089°E, 61 m, 24 Jun 1959, T.C. Maa, paratype, 1♂ (00196055) (AMNH), paratype, 1♂ (00321083), 1♀ (00321082) (BPBM). **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 24 May 1995, O. Missa, 1♀ (00302157) (ISNB); 09 Apr 1996, O. Missa,

Light Trap, 1♀ (00302120) (ISNB); 07 Jun 1996, O. Missa, 3♂ (00196011, 00196013, 00302156), 3♀ (00196018, 00302158, 00302160) (ISNB).

Arafuramiris dreikikir Schuh
Figure 4

Arafuramiris dreikikir Schuh, 1984: 203, figs. 665, 679, 682, 683 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by characters of generic diagnosis, medium size, eyes that do not take up entire lateral height of head, vertex width greater than width of half of one eye, darker coloration, and relatively narrow anterior margins of pronotum.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: *Arafuramiris oswaldi* is similar in overall morphology and coloration to *A. dreikikir*, but the latter species has a flat frons versus the relatively convex frons of *A. oswaldi*, is larger in size, the posterior lateral margins of the hemelytron are wider than the anterolateral margins, and it possesses visible clypeal muscle attachment sites.

HOLOTYPE: **PAPUA NEW GUINEA: East Sepik Prov.**; Dreikikir, 300–400 m., June 22, 1961, light trap, J.L. and M. Gressitt. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Papua:** Nabire, S. Geelwink Bay, 3.36667°S 135.48333°E, 02 Jul 1962–09 Jul 1962, J.L. Gressitt, 1♀ (00318937) (BPBM). **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 1995, O. Missa, 7♀ (00301955–00301959, 00302164–00302165) (ISNB); 24 May 1995, O. Missa, 1♀ (00196016) (ISNB); 30 Jun 1995, O. Missa, 1♀ (00301954) (ISNB); 03 Aug 1995, O. Missa, 2♀ (00301960, 00302166) (ISNB); 01 May 1996, O. Missa, 3♂ (00196014, 00302135–00302136), 1♀ (00302140) (ISNB); 05 Jun 1996, O. Missa, Light Trap, 1♀ (00302133) (ISNB); 28 Jun 1996, O. Missa, 2♂ (00302137, 00302138), 1♀ (00302139) (ISNB).

Arafuramiris gressitti Schuh
Figure 4

Arafuramiris gressitti Schuh, 1984: 204, figs. 665, 680, 684, 685 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by characters of generic diagnosis, broad eyes that take up entirety of lateral and anterior height of head, vertex that nearly equal to half width of one eye, paler coloration, and small size.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: The large eyes that dominate the lateral and anterior height of the head, the paler coloration, and the small size make it one of the more easily recognized species of *Arafuramiris*.

HOLOTYPE: **INDONESIA: West Irian:** Hollandia Binnen, 100 m; November 24, 1958, light trap, J.L. Gressitt. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 16 Mar 1993, O. Missa, 2♂ (00302171, 00302172) (ISNB); 17 May 1993, O. Missa, Light Trap, 2♂ (00302168, 00302169) (ISNB); 19 May 1993, O. Missa, 1♂ (00302149) (ISNB); 31 May 1993, O. Missa, Light Trap, 1♂ (00302142), 1♂ (00302141) (ISNB); 08 Jun 1993, O. Missa, Light Trap, 1♂ (00302167) (ISNB); 1995, O. Missa, 2♂ (00301932, 00301933), 2♂ (00301937, 00302159), 6♀ (00301922–00301924, 00302007, 00302180–00302181), Light Trap, 1♂ (00301934) (ISNB); 24 May 1995, O. Missa, 4♂ (00301952, 00302161–00302163), 1♀ (00301951) (ISNB); 26 May 1995, O. Missa, 1♂ (00302176), 1♀ (00196017) (ISNB); 14 Jun 1995, O. Missa, 3♂ (00301941–00301942, 00302006) (ISNB); 30 Jun 1995, O. Missa, 3♂ (00301930–00301931, 00302178) (ISNB); 30 Jun 1995, O. Missa, 2♂ (00301943, 00301944) (ISNB); 13 Jul 1995, O. Missa, 1♀ (00302008) (ISNB); 03 Aug 1995, O. Missa, 1♂ (00301940), 4♀ (00301926–00301929) (ISNB); 04 Aug 1995, O. Missa, 2♀ (00301925, 00302009) (ISNB); Apr 1996, O. Missa, Light Trap, 1♀ (00302134) (ISNB); 09 Apr 1996, O. Missa, Light Trap, 3♂ (00301947, 00302174–00302175) (ISNB); 10 Apr 1996, O. Missa, Light Trap, 1♂ (00302173) (ISNB); 15 Apr 1996, O. Missa, Light Trap, 1♂ (00302177) (ISNB); 24 Apr 1996, O. Missa, Light Trap, 1♂ (00302179) (ISNB); 01 May 1996, O. Missa, 1♂ (00301953) (ISNB); 03 Jun 1996, O. Missa, Light Trap, 3♂ (00301938–00301939, 00302150) (ISNB); 05 Jun 1996, O. Missa, Light Trap, 1♂ (00301948) (ISNB); 10 Jun 1996, O. Missa, Light Trap, 1♂ (00301946), 1♂ (00302148) (ISNB); 11 Jun 1996, O. Missa, Light Trap, 1♂ (00302004) (ISNB); 17 Jun 1996, O.

Missa, Light Trap, 1♂ (00301945) (ISNB); 18 Jun 1996, O. Missa, 1♂ (00301950) (ISNB); 04 Jul 1996, O. Missa, Light Trap, 2♂ (00301949, 00302005), 1♂ (00302170) (ISNB); 09 Jul 1996, O. Missa, Light Trap, 2♂ (00301935, 00301936) (ISNB); 10 Jul 1996, O. Missa, Light Trap, 1♂ (00302151) (ISNB).

Arafuramiris heath, new species
Plate 1, Figure 4

DIAGNOSIS: Recognized by small size, width of vertex nearly equal in width to one eye, dark coxae, transparent anterolateral margins of cuneus, relatively long segment 2, and eyes not entire height of head with vertex visible in lateral view. Female recognized by lateral margins of abdomen visible below lateral margins of hemelytron.

DESCRIPTION: *Male*: Macropterous, small sized, and medially constricted. Total length 2.97, width pronotum 1.02, maximum width across hemelytra 0.94. COLORATION: Eyes silver. Membrane dark brown with weak brown pigmentation along wing veins (pl. 1). Abdomen dark brown, abdominal segments 2 and 3 paler brown to white. STRUCTURE: Clypeus anterior to anterior margin of frons in lateral view, visible in dorsal view, frons convex. Vertex flat, posterior margin raised for medial half and lateral margins declining, forming shelflike appearance, width equivalent to approximately half total width of one eye. Eyes weakly removed from anterior margin of vertex, vertex visible in lateral view by anterior surface of eyes, eyes greater than ½ total height of head in lateral view. Length of segment 2 nearly equal to 1.33 times total head width. Apex of labial segment 1 extending past posterior margin of head, apex of segment 4 nearly reaching mesocoxae. Anterior lobe of pronotum relatively broad and well differentiated from posterior lobe. Anterolateral margins of hemelytra narrower than posterior lateral margins. Length of cuneus greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. GENITALIA: Pygophore small, less than one-fifth total length of abdomen, without elaborations, ventral surface nearly parallel to anterior surface. Endosoma, phallotheca, and parameres not examined.

Female: Macropterous, small, medially constricted. Total length 2.67, width pronotum 0.90, maximum width across hemelytra 0.89. COLORATION, SURFACE TEXTURE, AND VESTITURE as in generic description. STRUCTURE: Clypeus extending past anterior margin of frons, weakly visible in dorsal view, frons more convex than in male. Vertex nearly two times width of one eye and convex, eyes not total height of head in lateral view. Ventral surface of abdomen parallel to dorsal surface for greater than half of posterior length, abdominal sternite 1 distinctly narrowed compared to rest of abdominal segments, lateral margins of abdomen wider than lateral margins of hemelytron. Ovipositor spine absent. GENITALIA: Not examined.

ETYMOLOGY: Named for the host plant vegetation, which was listed as heath; noun in apposition.

HOSTS: Heath, referring to a shrubby, sclerophyll vegetation type in Australia.

DISTRIBUTION: Queensland.

DISCUSSION: This species initially was considered a population of *A. biakanus*, but the much wider head, and the width of the vertex nearly equivalent to the width of one eye versus nearly two times as wide as one eye in *A. biakanus* indicates they are separate species. This species is only known from the male holotype and female paratype, which were not dissected.

HOLOTYPE: **AUSTRALIA: Queensland:** 24 km NNW Heathlands, 11.55°S 142.46666°E, 19 Jun 1993, I.D.Naumann & P. Zborowski, heath, 1♂ (00088832) (QM).

PARATYPES: **AUSTRALIA: Queensland:** 24 km NNW Heathlands, 11.55°S 142.46666°E, 19 Jun 1993, I.D.Naumann & P. Zborowski, heath, 1♀ (00088840) (QM).

Arafuramiris jimmi Schuh
Figure 4

Arafuramiris jimmi Schuh, 1984: 205, figs. 665, 681 (n. sp., diag., descr., DV).

DIAGNOSIS: Recognized by characters of generic diagnosis, large size, width of vertex approximately same as width of one eye, relatively short and narrow anterior lobe of pronotum, and rounded frons.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: This species is similar in size to *Arafuramiris queenslandensis* but is differentiated by the wider vertex and the more elongate and narrow anterior lobe of the pronotum.

HOLOTYPE: **PAPUA NEW GUINEA: Western Highlands Prov.:** Korop, Upper Jimmi River Valley, 1300 m, July 12, 1955, light trap, J.L. Gressit. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 12 Apr 1996, O. Missa, 2♂ (00196000, 00302153), 5♀ (00196007–00196008, 00302154–00302155, 01960015) (ISNB). Baku Forest Stn, 5.1°S 145.48°E, 80 m, 04 Feb 1978–12 Feb 1978, W.C. Gagne, 1♂ (00318941) (BPBM). **Sandaun (West Sepik Province):** Angoram, 10 m, 14 Aug 1969, J.L. Gressitt, 1♀ (00318940) (BPBM).

Arafuramiris oswaldi, new species
Figures 4, 5A–C; plate 1

DIAGNOSIS: Recognized by small size, relatively convex and projecting frons, presence of transparent space on lateral margins of cuneus, relatively narrow lateral posterior margins of hemelytron, relatively elongate anterior lobe of pronotum, and shape of male genitalia.

DESCRIPTION: *Male*: Macropterous, small, medially constricted. Total length 2.82–2.97, width pronotum 0.92–0.94, maximum width across hemelytra 0.79–0.89. COLORATION: As in generic description. STRUCTURE: Clypeus flush with anterior margin of frons in lateral view, not visible in dorsal view, frons convex. Vertex concave, with posterior margin raised for medial half and lateral margins declining, forming shelflike appearance, width equivalent to approximately half total width of one eye. Eyes strongly removed from anterior margin of vertex, vertex hidden in lateral view by anterior surface of eyes and eyes entire height of head in lateral view, posterior margin of eyes obscure anterior margin of pronotum. Length of antennal segment nearly equal to 1.10 times total head width, weakly curving medially. Labial segment 1 apex past posterior margin of head, apex of segment 4 surpassing procoxae. Anterior lobe of pronotum relatively elongate and well differentiated from posterior lobe. Posterior lateral margins of hemelytra narrower than anterolateral margins. Cuneus length greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. GENITALIA: (fig. 5A–C). **Pygophore**: Small, less than one-fifth total length of abdomen, without elaborations, ventral surface nearly parallel to anterior surface. **Endosoma:** Relatively small compared to *A. queenslandensis*, apex of posterior strap terminates posterior to anterior margin of secondary gonopore (fig. 5A). **Phallotheca:** Fairly small, C-shaped, apex gently tapering toward point, anterior surface of posterior process with ridges (fig. 5C). **Left Paramere:** Moderately sized; posterior process broad, with sensory pits, and gently curving ventrally; anterior process stout but without sensory pits on interior margin, dorsal surface ventral to midline of total height of paramere; dorsomedial margin between anterior and posterior processes curved (fig. 5B.)

Female: Unknown.

ETYMOLOGY: Named for the collector of two of the known specimens, John Oswald.

HOSTS: Unknown; mercury vapor light.

DISTRIBUTION: Queensland and Northern Territory.

DISCUSSION: This species is most similar to the Papua New Guinea species *A. gressitti* in overall morphology and size, however, *A. oswaldi* can be differentiated by the narrow posterior margins of the hemelytra, the convex rather than straight frons, and the transparent anterolateral margin of the cuneus.

HOLOTYPE: **AUSTRALIA: Northern Territory:** ca. 50 km SE Kununurra, 64.07388°S 129.08888°E, 12 Jun 1998, J. Oswald. 1♂ (00248380) (MNT).

PARATYPES: **AUSTRALIA: Northern Territory:** 6 km S of Pine Creek (town), 13.8725°S 131.80583°E, 02 Jun 1998, J. Oswald, 1♂ (00248088) (TAMU). ca. 50 km SE of Kununurra, 64.07388°S 129.08888°E, 12 Jun 1998, J. Oswald, 1♂ (00248382) (TAMU). **Queensland:** 3 km NE of Mt. Webb, 15.05°S 145.15°W, 01 Oct 1980–30 Oct 1980, J.C. Cardale, 1♂ (00168810, 00168815) (ANIC).

Arafuramiris queenslandensis, new species
Figures 4, 5 D–G, 44E–G; plate 1

DIAGNOSIS: Recognized by large size, presence of transparent area on lateral margin

of cuneus, and large eyes. Overall size similar to *A. jimmi,* but narrower vertex and eyes that encompass total height of head in lateral view in *A. queenslandensis* separate the two species.

DESCRIPTION: *Male*: Macropterous, medium sized, medially constricted. Total length 3.22–3.71, width pronotum 0.94–1.08, maximum width across hemelytra 0.99–1.09. COLORATION: Pronotum, scutellum, and thorax mostly dark brown, anterior lobe of pronotum paler brown. Membrane pale brown and without pigmentation on wing veins (pl. 1). Abdomen dark brown with second and third abdominal segments paler brown to castaneous. STRUCTURE: Clypeus flush with anterior margin of frons in lateral view, not visible in dorsal view, frons convex. Vertex concave, with posterior margin raised for medial half and lateral margins declining, forming shelflike appearance, width equivalent to approximately half total width of one eye. Eyes strongly removed from anterior margin of vertex, vertex hidden in lateral view by anterior surface of eyes and eyes entire height of head in lateral view, posterior margin of eyes obscure anterior margin of pronotum. Length of antennal segment 2 equal in length to head width, weakly curving medially. Labial segment 1 apex past posterior margin of head, apex of segment 4 surpassing mesocoxae. Anterior lobe of pronotum relatively short and not as well differentiated as other Australian species of *Arafuramiris*. Hemelytral anterolateral margins narrower than posterior lateral margins. Cuneus length greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. GENITALIA: (fig. 5A–D). **Pygophore**: Small, less than one-fifth total length of abdomen, without elaborations, ventral surface nearly parallel to anterior surface. **Endosoma:** Relatively small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex into two separate processes, posterior process angled in different direction from anterior process, posterior process terminating anterior to basal margin of secondary gonopore (fig. 5D). **Phallotheca:** Relatively elongate, apex of paramere nearly perpendicular to posterior process, L-shaped, anterior margin of posterior process with ridges (fig. G). **Right Paramere:** Moderately sized, smaller than left paramere, with nearly parallel sides (fig. 5F). **Left Paramere:** Posterior process relatively narrow and with dorsal surface nearly straight; anterior process stout but without sensory pits on interior margin, dorsal surface of anterior arm above median of total height of paramere; dorsomedial surface concave (fig. 5E).

Female: Macropterous, medium sized, medially constricted. Total length 2.87–3.12, width pronotum 0.89–0.99, maximum width across hemelytra 0.84–1.03. COLORATION, SURFACE TEXTURE, AND VESTITURE: As in generic description. STRUCTURE: Clypeus extending past anterior margin of frons, weakly visible in dorsal view. Vertex nearly two times width of one eye and convex, eyes not total height of head in lateral view. Length of antennal segment 2 nearly equal to total head width. Ventral surface of abdomen parallel to dorsal surface for greater than half of posterior length, lateral margins narrower than lateral margins of hemelytron. Ovipositor spine absent. GENITALIA: As in generic description.

ETYMOLOGY: Named for the Australian state where the known specimens were collected.

HOSTS: Primarily Cupressaceae and Euphorbiaceae.

DISTRIBUTION: Queensland.

DISCUSSION: This species is similar in morphology to *A. gressitti* from Papua New Guinea, but is much larger in size, the length of the anterior lobe of the pronotum is shorter, and the lateral margins of the cuneus are transparent, all of which indicate that *A. queenslandensis* is a separate species.

HOLOTYPE: **AUSTRALIA: Queensland:** 11.2 km S of Lolworth Homestead, 20.26922°S 145.00658°E, 741 m, 18 May 2006, Cassis, Barrow, Finlay, Symonds, *Petalostigma pubescens* Domin (Euphorbiaceae), det. RBG staff, 1♂ (00291237) (QM).

PARATYPES: **AUSTRALIA: Queensland:** ***Cape York Islands Co.:*** Price of Wales Island, Aug 1920, J.A. Kusche, 1♂ (00318909) (BPBM). 11.2 km S of Lolworth Homestead, 20.26922°S 145.00658°E, 741 m, 18 May 2006, Cassis, Barrow, Finlay, Symonds, *Petalostigma pubescens* Domin (Euphorbiaceae), det. RBG staff, 1♂ (00392766), 1♀

(00392771) (AM), 4♂ (00392761–00392764), 6♀ (00392767–00392768, 00392772–00392775) (AMNH), 1♀ (00392769) (UNSW), 1♂ (00392765), 1♀ (00392770) (USNM). 19.5 km N of Mareeba, 16.81938°S 145.36766°E, 406 m, 24 May 2006, Cassis, Barrow, Finlay, Symonds, *Callitris intratropica* Benth. (Cupressaceae), det. RBG staff, 1♂ (00392780), 1♀ (00392781) (AMNH), 1♂ (00392779) (UNSW). Bundaberg, 24.8694°S 152.35375°E, 10 m, 09 Dec 1904, Koebele, 1♂ (00318908) (BPBM). Cairns, Hartleys Creek, 24 Apr 1957, W.W. Wirth, 1♀ (00318911) (USNM). Davies Creek National Park, 6 km SE of Kennedy Hwy on Davies Creek Rd, 17.00525°S 145.56841°E, 445 m, 31 May 2006, Cassis, Barrow, Finlay, Symonds, 1♂ (00392776) (AM), 1♀ (00392777) (AMNH). Mid-Queensland, 1942–1945, Unknown, 1♀ (00318910) (BMNH). ca. 30 km SE of Chillagoe, on Burke Developmental Rd, 17.36519°S 144.71405°E, 547 m, 01 Jun 2006, Cassis, Barrow, Finlay, Symonds, 1♀ (00392778) (AM).

Ausejanus, new genus

Figures 6–10, 44H–K; plates 1–4

TYPE SPECIES: *Idatiella albisignatus* Knight, 1938.

DIAGNOSIS: Distinguishable from other genera in Leucophoropterini and other Australian Phylinae by combination of primarily red to dark brown coloration of body and hemelytra, a contrastingly colored white to transparent transverse fascia on anterior portion of hemelytra in all but two species, presence of only simple setae in hemelytron and body vestiture, a simple male S-shaped endosoma composed of two straps united by a membrane and simple secondary gonopore, sexual dimorphism in coloration of antennal segment 2 and hemelytron, and large reddish to purple eyes.

DESCRIPTION: *Male*: Macropterous, relatively small to medium sized, elongate, and parallel sided. Total length 2.38–3.96, width pronotum 0.76–1.09, maximum width across hemelytra 0.89–1.38. COLORATION: Hemelytra gold yellow, pale brown to dark brown, and ruby red to burgundy, with majority of species having transverse, transparent or white pigmented fascia on anterior portion. **Head:** Head red, medium brown, or dark brown. Antennal segment 1 gold to pale brown, segment 2 red basally or gold yellow darkening distally toward segment 3 or completely dark, segment 3 completely to dark brown except basal joint where pale, segment 4 dark brown. Labium same color as head. Eyes ruby red to dark red. **Thorax:** Pronotum and scutellum red, medium brown, or dark brown. Thorax red, medium brown, or dark brown. Scent gland same coloration as thorax or paler. Presence of white band along posterior dorsal edge of metepisternum and scent gland in some species. *Legs:* Procoxa entirely pale yellow, red, pale brown, or dark brown, with meso- and metacoxae darker basally and golden apically, pale brown, red, or completely dark brown. Pro- and mesofemora gold brown, red, or pale brown to dark brown; metafemur gold or dark red to burgundy. Tibiae gold or dark brown with parallel rows of dark spicules. Tarsomeres completely dark brown or pale basally pale distally brown. *Hemelytra:* Primarily red, burgundy, gold, pale brown, or dark brown, sometimes with transparent to white-colored partial to complete transverse fascia on anterior portion of hemelytra. Transverse fascia can range from paler area next to claval suture to complete fascia that transverses clavus and corium. Cuneus white along fracture, extending approximately ½ to ⅓ of cuneus, remainder of cuneus dark red to brown. Membrane pale brown, with veins colored in some species red to dark brown. **Abdomen:** Red, dark brown, or gold, with abdominal sclerites 3–7 weakly paler. SURFACE AND VESTITURE: Dorsum shining, densely covered with subadpressed, simple gold setae. STRUCTURE: **Head:** Clypeus in dorsal view visible and produced, eyes occupy majority of width and height of head. Vertex flat, width ranging from less than width of eye to greater than width of eyes. Eye height equal to total height of head or nearly equal, anterior margins of eyes removed from dorsal surface of vertex, posterior margins partially obscuring anterior margin of pronotum. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and equal to in diameter or wider than segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 just

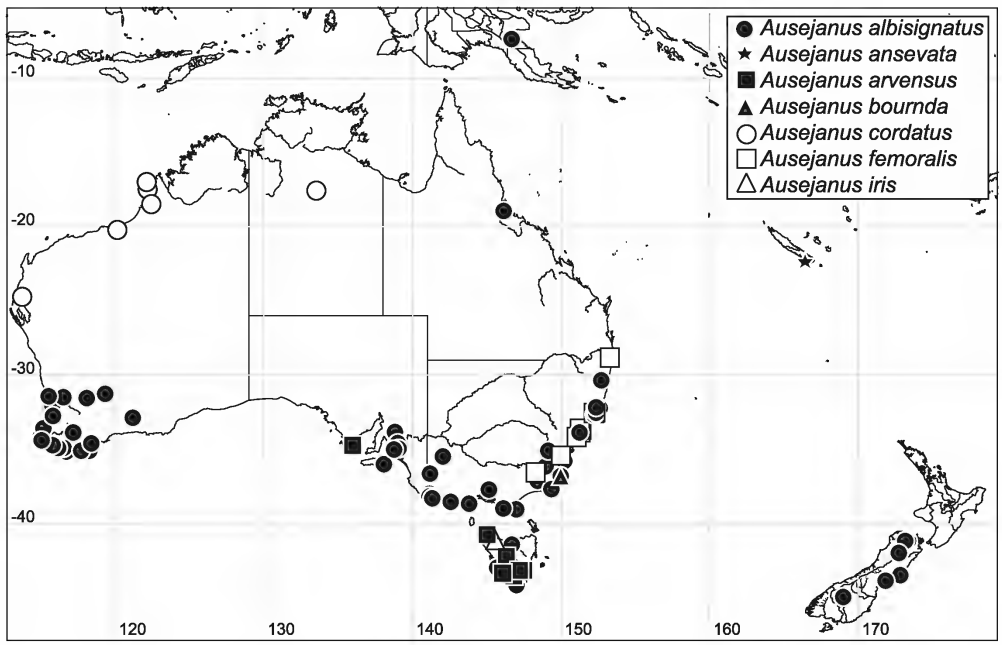

Figure 6. Distribution map of *Ausejanus* spp. (A–I).

longer than head width to at least 1.5 times head width. Antennal segments 3 and 4 slender and less than half length of segment 2. Apex of labial segment 1 surpassing posterior margin of head, and apex of fourth segment reaching or passing apex of metacoxa. **Thorax:** Pronotum more than two times as wide as long, no demarcation between anterior and posterior margins laterally or dorsally, dorsal surface nearly flat, lateral margins straight forming trapezoidal appearance in dorsal view. Calli weakly visible and raised. Pronotum without collar. Mesoscutum exposed, scutellum weakly transversely rounded. Scent gland approximately half of metepimeron. *Legs:* Long, slender with metafemora weakly flattened dorsoventrally. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins weakly sinuous, dorsally transversely rounded. Cuneus elongate triangular at least equal to or longer than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, and with or without thickenings on lateral margins or posterior to cuneal fracture. **Abdomen:** Narrow, elongate, with genital capsule less than ⅓ total length. GENITALIA: (figs. 9–10): **Pygophore:** Small and lacking elaborations, occupying about ¼ length of abdomen, ventral margin sloping upward toward apex. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small, weakly sclerotized, located at apex of endosoma (fig. 9A). **Phallotheca:** Fairly small, C- to L-shaped, apex gently tapering toward point (fig. 9B) or twisted at apex (10: C). **Right Paramere:** Moderately sized, smaller than left paramere, parallel sided (fig. 10C). **Left Paramere:** Moderately sized; posterior process slender, with sensory pits, and gently curving ventrally, relatively elongate compared to anterior process (fig. 9D–K) or relatively short and closer in size to anterior process (fig. 10A, B, D); anterior process stout but without sensory pits on interior margin.

Female: Macropterous. Total length 2.30–3.66, width pronotum 0.76–1.22, maximum width across hemelytra 1.04–1.54. COLORATION: Similar to male, but often pigmentation much more intense, with transverse fascia (if present) often containing white pigmentation to further contrast with red,

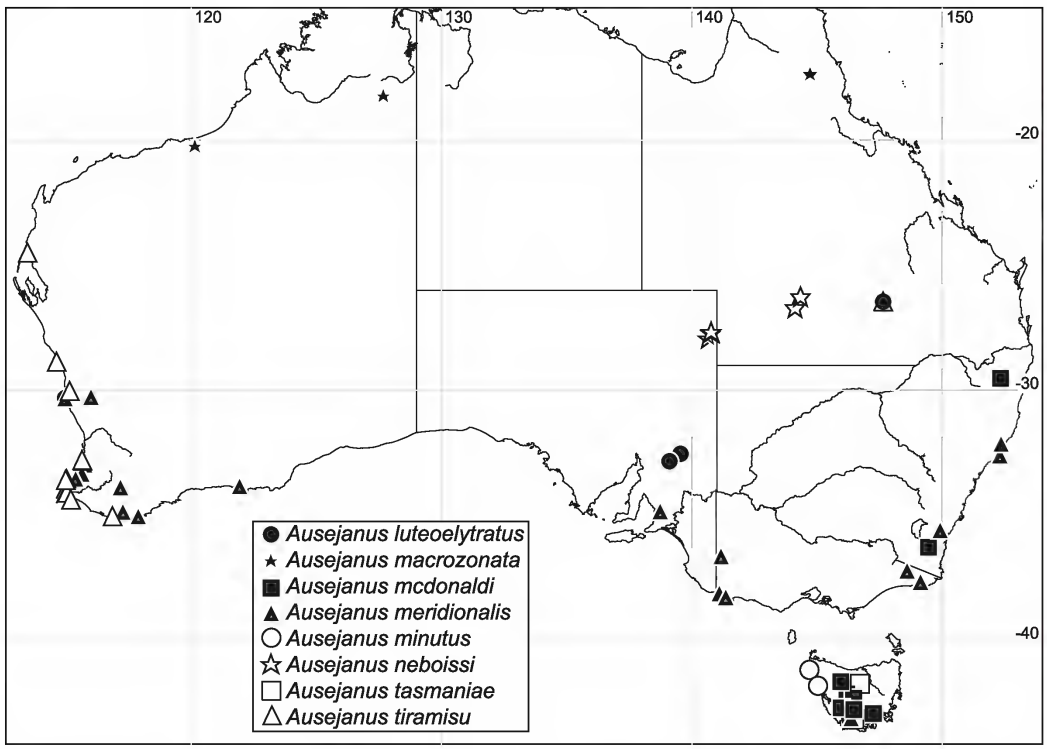

Figure 7. Distribution map of *Ausejanus* spp. (L–T).

dark red, brown, or dark brown hemelytra. Sexual dimorphism in segment 2, dark apically and paler basally. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: **Head:** Clypeus produced, minimally to strongly exserted in dorsal view. Vertex convex, width ranging from less than width of eye to greater than width of eyes. Eyes less than total height of head in lateral view. Antennal segment 2 longer and more slender than segment 1 at basal joint, increasing in diameter distally. Length of antennal segment 2 from just short of total head width to 1.25 times total head width. Pronotum more than two times as wide as long. Mesoscutum exposed, scutellum weakly transversely rounded. Lateral margins of hemelytron convex, dorsally transversely rounded. Cuneus shorter and wider than in male, cuneal fracture angled anteromesially. Abdomen parallel sided, ventral margin sloping dorsally. Spine sometimes present on ventral surface of ovipositor. GENITALIA (fig. 44H–K): Two separate triangular-shaped vestibular sclerites, internal lateral tube absent, vulva covered by apical sclerite (fig. 44J); lateral margins of first gonapophyses sclerotized between dorsal and ventral labiate plates; sclerotized rings weakly sclerotized (fig. 44K). Posterior wall mostly membranous, posterior margin sclerotized across margin, medial invagination (fig. 44H), lateral region of interramal sclerite sclerotized (fig. 44I).

ETYMOLOGY: A name formed by combining Australia and *Sejanus*; masculine.

HOSTS: Mostly endemic genera of Fabaceae, Myrtaceae, and Asteraceae in Australia, although several species are generalists and show little host specificity (e.g., *A. albisignatus* on introduced apple trees in New Zealand).

DISTRIBUTION: Throughout Australia and parts of southern Papua New Guinea, New Caledonia, New Zealand, and Mauritius (figs. 6–8).

DISCUSSION: *Ausejanus* is described to accommodate many of Australian species previously placed in *Sejanus*, which were found to form a distinct lineage in an analysis

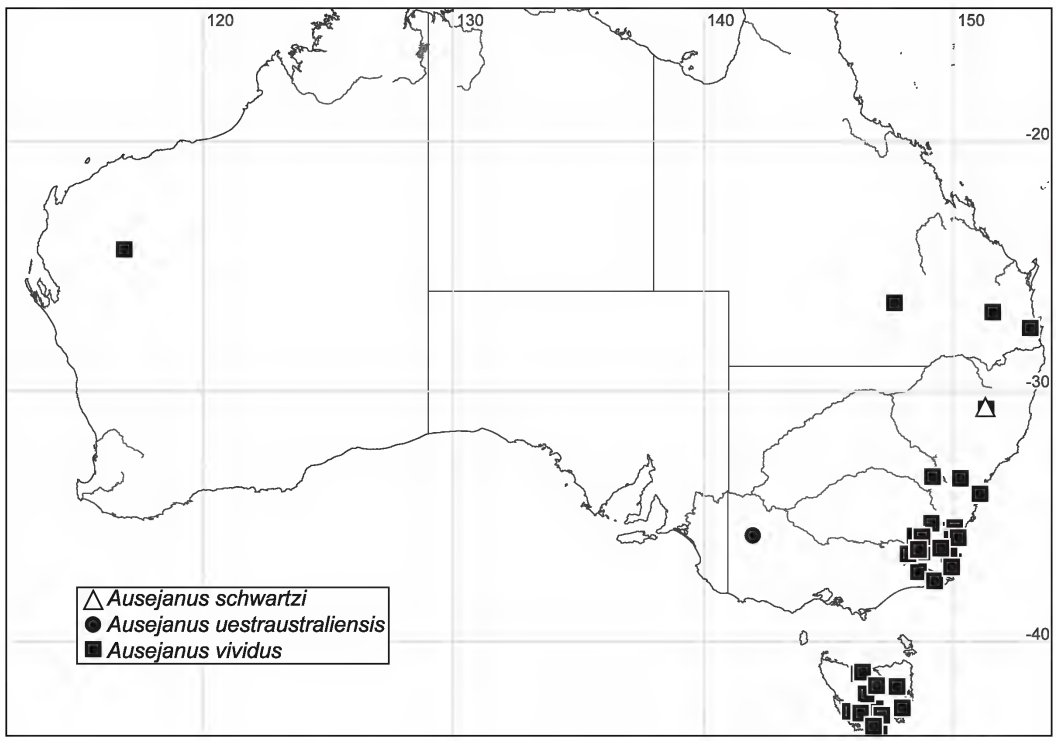

Figure 8. Distribution map of *Ausejanus* spp. (S, U, V).

of generic limits within the tribe (Menard and Woolley, in press). Several morphological and genitalic features, including the shape of the endosoma, unite *Ausejanus* spp. There is slight variation in the shape of the left paramere and phallotheca in three species, *A. minutus, A. bournda*, and *A. schwartzi,* which have the anterior process closer in length to the posterior process (fig. 10A, B, D), whereas all other species of *Ausejanus* have the posterior process relatively elongate (fig. 9D–K). Also, in *A. bournda* the phallotheca is relatively narrow, with a twisted apex, and with ridges on the posterior surface (fig. 10C), whereas the remaining *Ausejanus* species have an untwisted apex and a relatively wide body (fig. 9B). The overwhelming majority of species, however, do not have any quantifiable differences in the form of the male genitalia. Therefore, we emphasize the external morphology and coloration for the majority of the species-level character information. The female genitalia are identical for all of the currently known species. Species described by Carvalho and Gross on the basis of female holotypes were associated with male specimens when possible and rediagnosed on the basis of male characters. Species that could not be confidently associated with male specimens are treated as *incertae sedis*. All holotypes of new species are males.

KEY TO MALES OF *AUSEJANUS* SPP.

1. Overall coloration orange-red, including antennae, head, thorax and abdomen; transverse fascia on anterior of hemelytron and anterior margin of cuneus yellow-orange; found primarily on *Muehlenbeckia florulenta* Meissner (Polygonaceae); Eastern Australia. . . . . *neboissi* Carvalho and Gross
– Overall coloration brown, ruby red, or white, never orange-red; transverse fascia, if present, never yellow-orange; head, thorax, and antennae dark brown, golden, or ruby red . . 2
2. Anterior of hemelytron and anterior margin of cuneus lacking transverse fascia; hemelytron completely dark brown to yellowish brown. 3
– Anterior of hemelytron and anterior margin of cuneus possessing a partial or complete

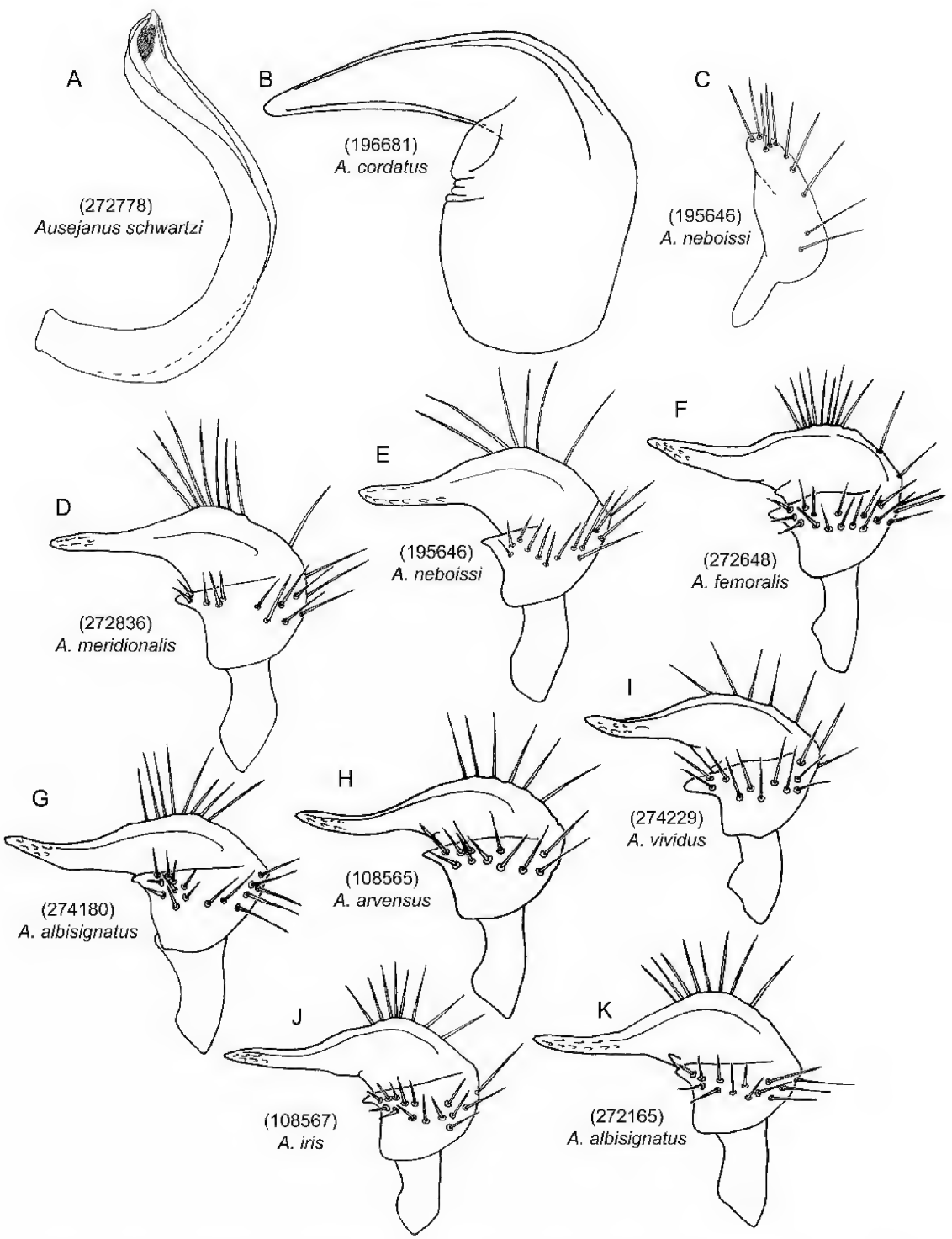

Figure 9. Male genitalia of *Ausejanus* spp. **A.** Endosoma, *A. schwartzi.* **B.** Phallotheca, *A. cordatus.* **C.** Right paramere, *A. neboissi.* **D–K.** Left paramere. **D.** *A. meridionalis.* **E.** *A. neboissi.* **F.** *A. femoralis.* **G, K.** *A. albisignatus.* **H.** *A. arvensus.* **I.** *A. vividus.* **J.** *A. iris.*

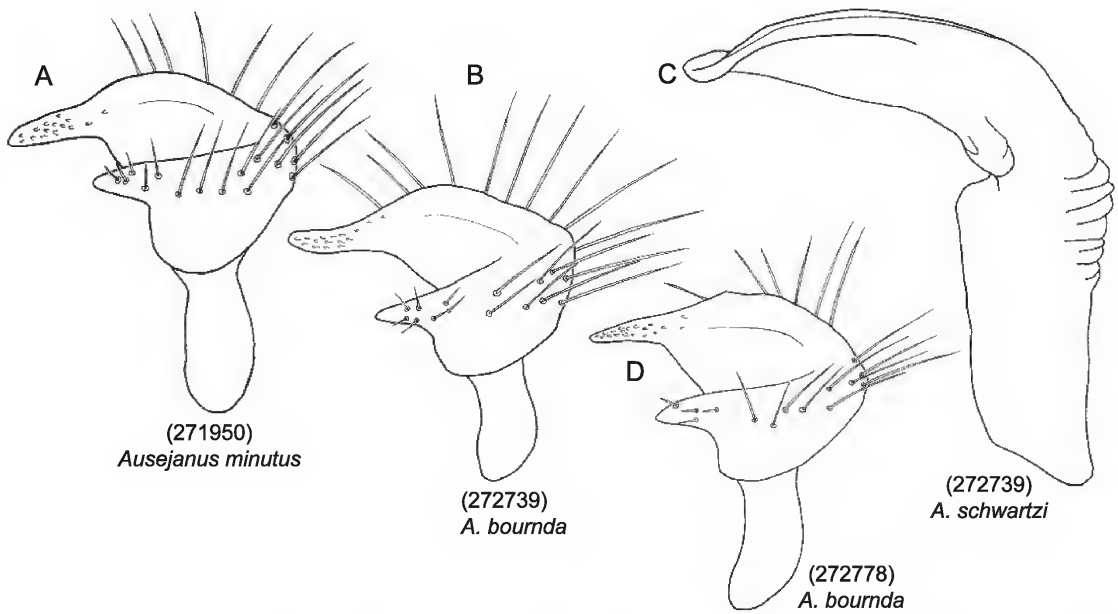

Figure 10. Male genitalia of *Ausejanus* spp. **A, B, D.** Left paramere. **A.** *A. minutus*. **B.** *A. bournda*. **C.** Phallotheca, *A. bournda*. **D.** *A. schwartzi*.

transverse fascia; hemelytron partially dark brown, light brown, mauve, ruby red, or burgundy 4

3. Hemelytron and appendages completely dark brown; southeastern Australia and Tasmania. . . . . *mcdonaldi* Carvalho and Gross

– Hemelytron completely light yellowish brown; appendages golden; New Caledonia. . . . . *ansevata* (Schuh)

4. Anterior ⅔ of abdomen golden, posterior ⅓ (including pygophore) dark brown; New South Wales and Queensland, Australia. . . . . *femoralis* Carvalho and Gross

– Abdominal coloration completely dark brown, light brown, or ruby red 5

5. Metafemur golden with ruby red maculation; found primarily on Chenopodiaceae. . . . . *luteoelytratus* Carvalho and Gross

– Metafemur uniformly dark brown, golden, ruby red, or burgundy; never with red maculation 6

6. Head, thorax, and abdomen ruby red; in Queensland and Western Australia. . . . . *macrozonata* Carvalho and Gross

– Head, thorax, and abdomen dark brown . . 7

7. Second antennal segment golden proximally, dark brown distally or completely golden. . . 8

– Second antennal segment completely dark brown 9

8. Second antennal segment golden basally, dark brown distally; hemelytron ruby red with white transverse fascia as a band posterior to apex of scutellum; found primarily on Thymelaceae . . . . . *meridionalis* Carvalho and Gross

– Second antennal segment completely golden; hemelytron ruby red with white area on anterior portion partially surrounding apex of scutellum, forming a white heart shape in dorsal view; found on Tiliaceae; interior of Western Australia and the Northern Territory . . . . . ***cordatus*, n. sp.**

9. All femora ruby red; found on *Leptospermum sp.*; Tasmania (Myrtaceae). . . . . *tasmaniae* Carvalho and Gross

– Femora golden, light brown, or dark brown . . 10

10. Transverse fascia encompassing anterior half of corium and entirety of corial margin; remaining area of hemelytron light ruby red. . . *uestaustralianus* Carvalho and Gross

– Transverse fascia forming a narrow band across anterior ⅓ to ½ of corium, never extending along entire corial margin; remaining area of hemelytron mauve, light brown, dark brown, or burgundy. 11

11. Hemelytron mauve, clavus dark brown; posterior ⅔ of cuneus burgundy; found primarily on *Ozothamnus sp.* (Asteraceae); Tasmania.. . . . . ***arvensus*, n. sp.**

– Hemelytron light brown, dark brown, or deep burgundy; clavus of same coloration as corium; posterior ½ to ⅔ of cuneus same coloration as remainder of hemelytron . . 12

12. Transverse fascia on anterior of hemelytron with opaque white pigmentation; found on

Ozothamnus hookeri (Asteraceae); Tasmania. . . . . ***iris*, n. sp.**

– Transverse fascia on anterior of hemelytron pale relative to remainder of corium, but without white pigmentation. 13

13. Corium posterior to apex of clavus brown with transparent areas medially; found on *Olearia axillaris* (Asteraceae); coastal Western Australia. . . . . ***tiramisu*, n. sp.**

– Posterior half of corium of uniform coloration 14

14. Total length wings greater than five times length of pronotum; hemelytron chocolate brown or burgundy brown. 15

– Total length wings less than five times length pronotum; hemelytron light brown 16

15. Transverse fascia across clavus in the form of a narrow white stripe with defined border; remainder of hemelytron dark chocolate brown; mostly on Fabaceae; eastern Australia from Queensland to Tasmania. . . . . *vividus* Carvalho and Gross

– Transverse fascia relatively broad, no well-defined border, sometimes not traversing entire hemelytron anteriorly; coloration deep burgundy brown; many hosts; throughout Australia and parts of Papua New Guinea. . . . . *albisignatus* Knight

16. Total length greater than 1.20; hemelytron with complete transverse fascia with defined border; left paramere as in figure 10D . . . . . ***schwartzi*, n. sp.**

– Total length less than 1.20; hemelytron with partial transverse fascia without defined border 17

17. Anterior process of left paramere directed ventrally relative to body of paramere (fig. 10A) . . . . . ***minutus*, n. sp.**

– Anterior process of left paramere directed dorsally, curving apically (fig. 10B). . . . . ***bournda*, n. sp.**

Ausejanus albisignatus (Knight), new combination

Figures 6, 9G, K, 44H–K; plates 1, 2

Idatiella albisignatus Knight, 1938: 25 (n. sp.).

Sejanus albisignata: Carvalho, 1958: 141 (catalog, n. comb).

Sejanus albisignatus: Steyskal, 1973: 207 (correction); Carvalho and Gross, 1982: 28, figs. 40–42, 110 (descr., dist., disc., fig.); Schuh, 1984: 155, figs. 502, 509–513 (diag., DV, MG); Eyles and Schuh, 2003: (diag., distr., biology, fig., DV, MG, FG).

Sejanus intermedius Carvalho and Gross, 1982: 24, figs. 49–52,112 (n. sp., descr., disc., DV). NEW SYNONYMY.

DIAGNOSIS: Distinguished from other members of *Ausejanus* by this combination of characters: a relatively small intraocular distance in male; deep burgundy to brown hemelytron with a contrasting transparent fascia limited to claval suture in eastern populations but also expanded into corium in southern and western Australian populations (pls. 1–2); and yellow to gold pro- and mesofemora and reddish-brown metafemora. Coloration similar to *A. meridionalis* and *A. iris,* but fascia in male *A. albisignatus* primarily transparent, lacking white pigmentation found in other species.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.09–3.96, width pronotum 0.92–1.09, maximum width across hemelytra 1.08–1.38. COLORATION: Dark brown, with hemelytra primarily burgundy to brown in color with transverse, transparent fascia on anterior portion (pls. 1–2). Head dark to medium brown. Antennal segment 1 gold to pale brown, segments 2 and 4 dark brown, third antennal segment dark brown, paler at joint with second segment. Labium dark brown. Eyes ruby red to dark red. Thorax, pronotum, and scutellum dark brown. Scent gland dark brown as thorax or paler brown. Procoxa either entirely pale yellow or brown basally and golden distally, meso- and metacoxa dark red or brown basally and gold apically. Pro- and mesofemora gold brown, metafemora dark red to burgundy. Tibiae gold with parallel rows of dark spicules. Basal tarsomeres pale, distally dark. Hemelytra primarily burgundy to brown hemelytra with transparent partial fascia along claval suture for over half length from anterior margin of clavus to wide band that completely transverses majority of anterior portion of corium and distal third of clavus. Cuneus white along fracture, coloration extending approximately ½ to ⅓ of cuneus, remainder of cuneus dark red to brown. Membrane pale brown. Abdomen dark brown, with abdominal sclerites 3–7 somewhat paler. STRUCTURE: Eyes in lateral view encompass total height of head, vertex width less than width of an eye. Antennal segment 2 nearly as long as 1.5 times head width. Remaining structure characteristics in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.92–3.66, width pronotum 0.90–1.22, width at widest part of hemelytra 1.09–1.54. STRUCTURE: Vertex less than half total head width. Length antennal segment 2 nearly 1.2 times total head width. COLORATION: Dark red to brown, with hemelytra having more conspicuous transparent fascia than in male (pls. 1–2). Segment 2 gold basally with darkening toward joint with third antennal segment. Transverse fascia widest along claval suture (pl. 2). Cuneus white along fracture, coloration extending approximately ½ to ⅔ of cuneus, remainder of cuneus dark red to brown. GENITALIA: As in generic description.

HOSTS: Mostly Fabaceae and Myrtaceae, but other families include Casuarinaceae, Sapindaceae, Ericaceae, Malvaceae, Proteaceae, Asteraceae, Thymelaceae, Chenopodiaceae, Lauraceae, Papilionaceae, and Mimosaceae.

DISTRIBUTION: Eastern Australia, New Zealand, and Mauritius (fig. 6).

DISCUSSION: Knight (1938) described this species from New Zealand; it was later recorded from Australia (Carvalho and Gross 1982). The type and most of the eastern Australian specimens have the transverse fascia limited primarily to the area around the claval suture. Carvalho and Gross (1982) used the relatively narrow hemelytral fascia as one of the delineating factors between *albisignatus* and *intermedius* (both as *Sejanus*), which are otherwise identical in morphology and coloration. However, based on our study of the *Ausejanus* fauna of South and Western Australia, the area of the transverse fascia appears to be highly variable, and there are several intermediate forms between the eastern forms with the incomplete fascia and populations in South and Western Australia with a more complete fascia (pls. 1–2). Therefore, *S. intermedius* is synonymized with A. *albisignatus*. It appears that *A. albisignatus* is a hyperdiverse assemblage of populations across Australia and New Zealand, all united by the relatively narrow vertex, the overall burgundy to reddish-brown coloration of the hemelytron, the lack of distinct white pigmentation in the transverse fascia, and the coloration of the appendages (pls.1–2).

Ausejanus albisignatus is also unique in the large number of host plants. This may be partly due to it being at least partially predatory. Several records describe the species feeding on other small, soft-bodied insects such as psyllids and mites in apple orchards of New Zealand (Wearing and Attfield 2002, Martin et al., 2007), and psyllids in New South Wales (personal obs.). The lack of fidelity on a particular host plant may explain why members of this species have been able to establish themselves as far away as Mauritius, and as successful predators in commercial apple groves in New Zealand. However, detailed population-level rearing and breeding studies are needed to test this hypothesis, especially for the Australian populations where there has been less focus on the biology than in New Zealand.

HOLOTYPE: **New Zealand: Nelson:** Research Orchard, 41.295°S 173.249°E, 16 Nov 1931, L.J. Durnbleton, 1♂ (00085514) (BMNH) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: Australian Capital Territory:** Black Mountain, 35.26387°S 149.10051°E, 19 Nov 1985, G. Cassis, *Acacia decurrens* (Wendl.f.) Willd. (Fabaceae), 1♀(00090995) (AM); 1990, Kireychuk, 1♀ (00229518) (ZISP); 03 Nov 1990–04 Nov 1990, Kireychuk, 3♂ (00229464–00229466) (ZISP). Botanic Gardens, Canberra, 35.27882°S 149.10913°E, 584 m, 16 Nov 1998, L. Mound, *Acacia melanoxylon* R.Br. (Fabaceae), 2♀ (00088854, 00088855) (AM). **New South Wales:** Araluen, 35.65001°S 149.8167°E, 50 m, 11 Nov 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. (Fabaceae), det. B.J. Conn 1996 NSW 395993, 3♀ (00090991–00090993), *Acacia mearnsii* De Wild. (Fabaceae), det. B.J. Conn 1996 NSW 395993, 1♀ (00272736) (AMNH). Ashton Park, 33.84819°S 151.24394°E, 3 m, 15 Oct 1958, M.I. Nikitin, 1♀ (00174009) (BMNH). Bateman's Bay, 35.71475°S 150.1839°E, 2 m, 21 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Casuarina glauca* Sieber ex Spreng. (Casuarinaceae), det. NSW staff NSW658209, 1♂ (00272744) (AMNH). Booti Booti NP, 32.27972°S 152.52444°E, 08 Oct 1997, L. Wilkie, 2♀ (00274261, 00274262) (AM); 09 Oct 1997, L. Wilkie, 1♀ (00274255) (AM). Bootie Booti NP, 32.26305°S 152.36527°E, 08 Nov 1997, L. Wilkie, *Monotoca elliptica* (Sm.)

R.Br. (Ericaceae), 1♀ (00274263) (AM). Bournda National Park, North Wallagoot, Turingal Head, 36.78452°S 149.9568°E, 16 m, 20 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Kunzea ambigua* (Sm.) Druce (Myrtaceae), det. NSW staff NSW658199, 4♀ (00272732–00272735) *Melaleuca processillaris* (Sol. ex Gaertn.) Sm. (Myrtaceae), det. NSW staff NSW658203, 1♂ (00272743) (AMNH). Cabramatta, Valley of Georges River, 33.89444°S 150.9375°E, 24 Sep 1960, M.I. Nikitin, 1♂ (00174017) (BMNH); 01 Oct 1960, M.I. Nikitin, 2♀ (00174014, 00174015) (BMNH); 02 Oct 1960, M.I. Nikitin, 1♂ (00174011), 2♀ (00174012, 00174013) (BMNH), 1♂ (00318902) (BPBM); 03 Nov 1962, M.I. Nikitin, 1♀ (00174016) (BMNH). Calbramatta, 33.895°S 150.9359°E, 25 m, 28 Dec 1965, M.I. Nikitin, 1♂ (00174018) (BMNH). Casula, 33.9473°S 150.9077°E, 48 m, 14 Nov 1958, M.I. Nikitin, 1♀ (00174019) (BMNH). Dee Why Beach, off Dee Why Parade Road, 33.75°S 151.28333°E, 22 Nov 2006–23 Nov 2006, K. Menard and N. Tatarnic, *Melaleuca* sp. (Myrtaceae), 2♂ (00108522, 00272148), 7♀ (00197192–00197198) (AMNH). Deua N.P., Wolli Property, 35.94517°S 149°E, 08 Oct 1988, G. Cassis, *Acacia* sp. (Fabaceae), 1♂ (00088852), 1♀ (00088853) (AM). Dorrigo, 30.3333°S 152.7°E, 566 m, W. Heron, 2♀ (00371743, 00371744) (AMNH). Liverpool, 33.92505°S 150.9244°E, 28 m, 20 Nov 1964, M.I. Nikitin, 1♂ (00174010) (BMNH). Myall Lakes NP, 32.57916°S 152.29083°E, 08 Oct 1997, L. Wilkie, *Monotoca elliptica* (Sm.) R.Br. (Ericaceae), 1♀ (00274240) (AM); 09 Oct 1997, L. Wilkie, *Monotoca elliptica* (Sm.) R.Br. (Ericaceae), 1♂ (00274180), 1♀ (00274264) (AM); 10 Oct 1997, L. Wilkie, *Monotoca elliptica* (Sm.) R.Br. (Ericaceae), 1♂ (00274172) (AM). Myall Lakes National Park, 32.487°S 152.39216°E, 10 Nov 1997, L. Wilkie, *Monotoca elliptica* (Sm.) R.Br. (Ericaceae), 1♂ (00274236) (AM). Sydney, 33.8652°S 151.2096°E, 05 Feb 1931, K.C. McKeown, 1♂ (00393689) (AM); Oct 1931, K.K. Spence, 1♀ (00168818) (ANIC). **Queensland:** Paluma Dam Rd, 18.95°S 146.15°E, 09 Nov 1990, W.F. Chamberlain, 1♀ (00370668) (TAMU). **South Australia:** 1 km S of Riverton, 34.16667°S 138.75°E, 250 m, 30 Oct 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. [introduced] (Fabaceae), det. B.J. Conn 1996 NSW 395959, 1♂ (00272142), 10♀ (00273474–00273483) (AMNH). 7 km E Para Wirra National Park near Williamstown, 34.70001°S 138.85°E, 250 m, 31 Oct 1995, Schuh, Cassis, and Gross, *Acacia paradoxa* DC. (Fabaceae), det. B.J. Conn 1996 NSW 395964, 4♀ (00274819–00274822) (AM), *Acacia paradoxa* DC. (Fabaceae), det. B.J. Conn 1996 NSW 395964, 1♂ (00274807), 32♀ (00197138–00197142, 00274809–00274818, 00274823–00274839) *Dodonaea viscosa* Jacq. (Sapindaceae), det. P.G. Wilson 1996 NSW 395965, 1♂ (00272143), 1♀ (00273416) (AMNH), *Acacia paradoxa* DC. (Fabaceae), det. B.J. Conn 1996 NSW 395964, 1♀ (00197143) (USNM). Colonel Light Gardens, 34.9836°S 138.5921°E, 199 m, 20 Nov 1957, R.V. Southcott, *Grevillea robusta* (Proteaceae), 2♂ (00169063, 00169064), 1♀ (00169066) (SAMA). Fleurieu Peninsula, Deep Creek Cons. Pk., 35.62777°S 138.22194°E, 270 m, 25 Nov 1989–08 Dec 1989, R. Wharton and J. Bracken, 1♂ (00090979) (AM). Hindmarsh Falls, 35.43998°S 138.58282°E, 224 m, 24 Dec 1961, E.B. Britton and N. Tindale, 1♀ (00174024) (BMNH). Mount Lofty, 34.974°S 138.709°E, 31 Dec 1912, R.E. Turner, 1♀ (00174021) (BMNH). Para Wirra National Park, 34.91668°S 138.9167°E, 350 m, 31 Oct 1995, Schuh, Cassis, and Gross, *Acacia paradoxa* DC. (Fabaceae), det. B.J. Conn 1996 NSW 395964, 7♂ (00273355–00273360, 00273415), 57♀ (00273417–00273473) (AMNH). **Tasmania:** 2.9 km SE from Southwest National Park (Maydena access): junction Scott's Peak Rd and Frodshams' Pass, 42.83639°S 146.37898°E, 570 m, 17 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. NSW staff NSW658221, 5♀ (00272264–00272268) (AM). Lifey Falls Rd., 01 Mar 1990, G. Cassis, *Helichrysum* sp. (Asteraceae), 5♂ (00393697–00393701), 8♀ (00393702–00393709) (AM). Mt. Field National Park, Russell Falls Visitor Centre, 42.68151°S 146.7168°E, 167 m, 16 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia melanoxylon* R.Br. (Fabaceae), det. NSW staff NSW658217, 14♀ (00272250–00272263) (AM). Mt. Pine [Pine Lake], 41.74202°S 146.70254°E, 1196 m, 28 Feb 1990, G.

Cassis, *Leptospermum* sp. (Myrtaceae), 1♀ (00393749) (AM). Southwest National Park (Maydena access): Edgar Campground on Scotts Peak Rd, 43.03019°S 146.3497°E, 293 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. NSW staff NSW658234, 1♂ (00272249), 10♀ (00272269–00272278) (AM), *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. NSW staff NSW658234, 1♀ (00108556) (AMNH). Southwest National Park: Cockle Creek, on Whale Walk Track, 43.57847°S 146.901°E, 13 m, 20 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia verticillata subsp. verticillata* (L'Her.) Willd. (Fabaceae), det. NSW staff NSW658239, 3♂ (00272242–00272244) (AMNH). Strathgordon, Lake Pedder Chalet, 42.76859°S 146.0461°E, 337 m, 18 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. NSW staff NSW658226, 4♂ (00272245–00272248), 5♀ (00272279–00272283) (AM), *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. NSW staff NSW658226, 1♂ (00108558), 1♀ (00108555) (AMNH). Tarraleah Power Stationgrounds, on A10, NW of Hamilton, 42.29848°S 146.4584°E, 366 m, 22 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. Field ID, 1♂ (00108582) (AMNH). **Victoria:** 5 km E of Cann River, Reedy Creek, 37.5681°S 149.2036°E, 70 m, 19 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Dillwynia glaberrima* Sm. (Fabaceae), det. NSW staff NSW658195, 1♀ (00273076) (AMNH). 8 km NW of Peterborough, 38.56668°S 142.8°E, 50 m, 05 Nov 1995, Schuh and Cassis, *Acacia verticillata var. verticillata* (L'Her.) Willd. (Fabaceae), det. B.J. Conn 1996 NSW 395992, 1♂ (00274309), 3♀ (00274313–00274315) (AM), 8♂ (00273139–00273142, 00273144–00273147), 1♀ (00273148) (AMNH). 9 km N of Apollo Bay, 38.72679°S 143.66943°E, 113 m, 20 Dec 1989, R. Wharton, 2♀ (00370666, 00370667) (TAMU). Beauchamp Falls, 38.64885°S 143.6004°E, 454 m, 18 Jan 1962, P. Aitken, 1♀ (00169260) (QDPI). Brodribb River, 64 km W of Cann River, 37.2°S 148.5833°E, 50 m, 08 Nov 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. [introduced] (Fabaceae), det. B.J. Conn 1996 NSW 395993, 2♀ (00274310, 00274311) (AM), 2♂ (00272140, 00274305), 3♀ (00273149–00273151) (AMNH). Discovery Bay Coastal Park, Lake Monibeong, 38.13534°S 141.184°E, 5 m, 07 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Acacia longifolia subsp. sophorae* (Labill.) Court (Fabaceae), det. Field ID, 1♀ (00273112) (AMNH). Discovery Bay National Park, Swan Lake Beach area, 38.21766°S 141.3098°E, 33 m, 08 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Olearia glutinosa* (Lindl.) Benth. (Asteraceae), det. NSW staff NSW658135, 1♀ (00273207), 1♂ (00273194) (AMNH). Little Desert National Park, 5–6 km W of McDonald Hiway, 36.61668°S 141.1667°E, 150 m, 03 Nov 1995, Schuh and Cassis, *Acacia acinacea* Lindl. (Fabaceae), det. B.J. Conn 1996 NSW 395983, 1♀ (00274316) (AM), 4♂ (00273160–00273163), 6♀ (00273281–00273286) (AMNH). Lower Glenelg National Park, 38.0476°S 141.1596°E, 20 m, 07 Nov 2002, Cassis, Schuh, Schwartz, Silveira, 1♂ (00273114), 3♀ (00273109–00273111) (AMNH). Montmorency, 37.71754°S 145.12103°E, 82 m, 10 Dec 1966, E. Hamilton-Smith, 1♂ (00169068) (SAMA). Wilsons Promonotory National Park, Darley River area, 38.97705°S 146.2749°E, 50 m, 18 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658184, 8♂ (00273152–00273159), 10♀ (00273287–00273296) (AMNH). Wilsons Promonotory National Park, Sqeaky Bay trail, opposite Lilly Pilly car park, 39.02365°S 146.8199°E, 53 m, 18 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Kunzea ambigua* (Sm.) Druce (Myrtaceae), det. NSW staff NSW 658180, 16♂ (00273209–00273223, 00273227), 24♀ (00273225–00273226, 00273228–00273249) (AMNH). Wyperfeld National Park, Moonah Track, 35.46302°S 142.0464°E, 65 m, 04 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Acacia brachybotrya* Benth. (Fabaceae), det. NSW staff NSW658103, 9♀ (00273255–00273263) *Acacia montana* Benth. (Fabaceae), det. NSW staff NSW658102, 1♂ (00273164), 5♀ (00273250–00273254) (AMNH). **Western Australia:** 2 km W of Caves Road, Leeuwin Naturaliste National Park, 34.1497°S 115.0657°E, 100 m, 04 Dec 1999, R.T. Schuh, G. Cassis, & R. Silveira, *Acacia pentadenia* Lindl. (Mimosaceae), det. PERTH staff PERTH 05671752, 6♀ (00371925–00371930)

Bossiaea disticha Lindl. (Papilionaceae), det. PERTH staff PERTH 05671841, 2♂ (00371038, 00371039), 24♀ (00371040–00371052, 00371914–00371924) (AM), *Pimelea sylvestris* R.Br. (Thymelaeaceae), det. PERTH staff PERTH 05671140, 1♂ (00108527) *Bossiaea disticha* Lindl. (Papilionaceae), det. PERTH staff PERTH 05671841, 1♂ (00271930), 8♀ (00108534, 00272150–00272156) (AMNH). 2.1 km W of Broke Inlet Road on Chesapeak Road, D'Entrecasteaux National Park, 34.8918°S 116.4644°E, 30 m, 02 Dec 1999, R.T. Schuh and G. Cassis, *Jacksonia horrida* DC. (Papilionaceae), det. PERTH staff PERTH 05670500, 1♀ (00371055) (AM). 3 km S of Kojonup, Sampson Road, 33.87088°S 117.1648°E, 310 m, 08 Dec 1997, Schuh, Cassis, Brailovsky, Asquith, *Melaleuca rhaphiophylla* Schauer (Myrtaceae), det. PERTH staff PERTH 05879183, 1♂ (00272164) (AMNH). 10 km east of Porongurup, 34.66482°S 117.95218°E, 159 m, 02 Dec 1982, W.F. Chamberlain, 1♂ (00248072) (TAMU). 10.3 km N of South Coast Hiway on North Walpole Road toward Mt. Frankland, 34.89687°S 116.7099°E, 190 m, 02 Dec 1999, R.T. Schuh and G. Cassis, *Acacia pentadenia* Lindl. (Mimosaceae), det. PERTH staff PERTH 05672120, 1♂ (00371845), 5♀ (00371846–00371850), 2♀ (00197171, 00197172) (AM), 1♂ (00271929), 20♀ (00108513, 00108533, 00197120–00197137) (AMNH), 1♂ (00272158) (USNM). 12.5 km W of Broke Inlet Road on Chesapeak Road, D'Entrecasteaux National Park, 34.84055°S 116.3724°E, 20 m, 02 Dec 1999, R.T. Schuh and G. Cassis, *Callistachys lanceolata* Vent. (Papilionaceae), det. PERTH staff PERTH 05670837, 5♀ (00197173–00197177) (AM), 6♂ (00197157–00197162) (AMNH). 14 mi W of Southern Cross, 31.23178°S 119.32833°E, 375 m, 16 Sep 1962, E.S. Ross & D.Q. Cavagnaro, 1♀ (00373924) (WADA). 15 mi W of Merredin, 31.548°S 118.055°E, 275 m, 15 Sep 1962, E.S. Ross & D.Q. Cavagnaro, 2♂ (00373918, 00373922), 3♀ (00373919–00373921) (WADA). 31.1 km W of Broke Inlet Road on Chesapeak Road, 34.77748°S 116.193°E, 40 m, 03 Dec 1999, R.T. Schuh and G. Cassis, 3♀ (00371851–00371853) (AM). 39 km N of Albany, Millinup Road at Chester Pass Hiway, 34.70677°S 117.959°E, 260 m, 30 Nov 1999, R.T. Schuh and G. Cassis, *Callistachys lanceolata* Vent. (Papilionaceae), det. PERTH staff PERTH 05670322, 1♂ (00108530), 2♀ (00272165, 00272171) (AMNH). Albany, 35.0227°S 117.88139°E, Jan 1966, J.A. Grant, 1♂ (00174023), 1♀ (00174022) (BMNH), 11♂ (00318877–00318887), 14♀ (00318888–00318901) (BPBM); Augusta, 34.34212°S 115.1661°E, 30 m, 04 Dec 1999, R.T. Schuh and G. Cassis, *Agonis flexuosa* (Willd.) Sweet (Myrtaceae), 6♂ (00090973–00090978), 8♀ (00090980–00090987), *Hakea oleifolia* (Sm.) R.Br. (Proteaceae), det. PERTH staff PERTH 05670462, 2♀ (00371053, 00371054) (AM), *Melaleuca incana incana* R.Br. (Myrtaceae), det. PERTH staff PERTH 05671906, 2♂ (00108526, 00108529), 4♀ (00272160–00272163) (AMNH). Cape Leeuwin, 34.37154°S 115.1363°E, 20 m, 04 Dec 1999, R.T. Schuh, G. Cassis, & R. Silveira, *Agonis flexuosa* (Willd.) Sweet (Myrtaceae) PERTH 05670152, 2♂ (00371836, 00371837), 7♀ (00371838–00371844) (AM). Conspicuous Beach, Walpole-Nornalup National Park, 10 km E of Nornalup, 35.03725°S 116.8443°E, 30 m, 17 Dec 1997, Schuh, Cassis, Brailovsky, *Agonis flexuosa var. flexuosa* (Willd.) Sweet (Myrtaceae), det. PERTH staff PERTH 05055423, 2♂ (00108528, 00271913) (AMNH). Cosy Corner Beach East, Torbay Sound, W of Albany, 35.06033°S 117.6446°E, 2 m, 01 Dec 1999, R.T. Schuh, G. Cassis, & R. Silveira, 1♂ (00371912), 1♀ (00371913) (AM), *Agonis flexuosa var. flexuosa* (Willd.) Sweet (Myrtaceae),det. PERTH staff PERTH 05671809, 4♂ (00197116–00197119) (AMNH). Dewel Cove, North of Augusta, 34.27011°S 115.05871°E, 79 m, 31 Oct 1982, W.F. Chamberlain, 1♂ (00248073) (TAMU). Helena Valley, 31.57°S 116.33°E, 27 Sep 1979, J.R. Hanley, *Acacia* sp. (Fabaceae), 1♂ (00373917) (WADA). Mosman Park, Perth, 32.0209°S 115.7687°E, 20 m, 24 Nov 1998, G. Cassis, *Agonis flexuosa* (Willd.) Sweet (Myrtaceae), det. Perth PERTH 05227410, 11♀ (00197105–00197115), 9♂ (00197069–00197077), 22♀ (00197078–00197099), 23♀ (00197046–00197068) (AMNH); 30 Nov 1998, G. Cassis, *Agonis flexuosa* (Willd.) Sweet (Myrtaceae), det. Perth PERTH 05227410, 5♀ (00197100–00197104) (AMNH); 15 Nov 1999, R.T. Schuh and G. Cassis, *Agonis flexuosa flexuosa* (Willd.) Sweet (Myrtaceae), det. PERTH staff PERTH 05670152, 9♂ (00371931–00371939), 21♀ (00371034–00371037, 00371940–00371956)

Eucalyptus sp. (Myrtaceae), det. PERTH staff PERTH 05670969, 1♀ (00090966) (AM), *Agonis flexuosa flexuosa* (Willd.) Sweet (Myrtaceae), det. PERTH staff PERTH 05670152, 1♂ (00108512), 1♀ (00108531), 1♂ (00271927), 15♂ (00108594, 00271914–00271926, 00271928), 56♀ (00108593, 00271931–00271943, 00272100–00272138, 00272141, 00272144–00272145), (AMNH). Peak Charles National Park Campground, 32.88335°S 121.1703°E, 300 m, 20 Nov 1999, R.T. Schuh, G. Cassis, & R. Silveira, *Rhagodia preissii preissii* Moq. (Chenopodiaceae), det. PERTH staff PERTH 05670713, 1♀ (00108539) (AMNH). Perth, 31.9554°S 115.85858°E, 07 Dec 1971, J.A. Slater, *Melaleuca rhaphiophylla* Schauer (Myrtaceae), 1♂ (00371714) (AMNH); 12 Dec 1971, J.A. Slater, *Melaleuca rhaphiophylla* Schauer (Myrtaceae), 1♀ (00371742), 6♀ (00371736–00371741) (AMNH); 14 Dec 1971, J.A. Slater, 1♂ (00371715) (AMNH); 17 Dec 1971, J.A. Slater, 1♂ (00090969) (AM), *Melaleuca rhaphiophylla* Schauer (Myrtaceae), 1♂ (00371716) (AMNH). Point Rd Campground. Leeuwin Naturaliste National Park, 34.09361°S 115.02416°E, 74 m, 03 Dec 1998, G. Cassis, *Cassytha racemosa* Nees (Lauraceae), det. WA Herbarium Staff PERTH 05227259, 1♀ (00272157) (AMNH). Wateroo National Park, 30.26666°S 115°E, 08 Sep 1990, G. Cassis, *Acacia* sp. (Fabaceae), 5♂ (00393752–00393756), 18♀ (00393757–00393774) (AM). Yalgorup National Park, 32.83583°S 115.65111°E, 27 Nov 1998, G. Cassis, *Conospermum triplinervium* R.Br. (Proteaceae) PERTH 05227488, 1♀ (00272139) (AMNH). Yallingup, 33.71877°S 115.13087°E, 59 m, 01 Dec 1913–12 Dec 1913, R.E. Turner, 1♂ (00174020) (BMNH). Yanchep National Park, 31.534°S 115.68°E, 08 Dec 1971, J.A. Slater, 2♂ (00371717, 00371718), 14♀ (00371720–00371721, 00371723–00371734) *Agonis flexuosa* (Willd.) Sweet (Myrtaceae), 1♂ (00371719), 2♀ (00371722, 00371735) (AMNH). ca 13 km E of Denmark on South Coast Hiway, 34.99397°S 117.5086°E, 80 m, 01 Dec 1999, R.T. Schuh and G. Cassis, *Beaufortia sparsa* R.Br. (Myrtaceae), det. PERTH staff PERTH 05671949, 2♀ (00090967, 00090968) (AM). **MAURITIUS:** unknown, 20.2°S 57.5°E, Mar 1974, J.C.M. Carvalho, 1♂ (00271693) (USNM). **NEW ZEALAND: Canterbury:** Rakaia, 43.75544°S 172.0219°E, 105 m, Feb 1955, T.M. Wells, 1♂ (00196088) (AMNH). **Nelson:** ***Richmond Co.:*** Research Orchard, Appleby, 41.29555°S 173.09888°E, 3 m, Oct 1970, E. Collyer, 3♂ (00246621–00246623), 1♀ (00246620) (TAMU), 4♂ (00271686–00271689) (USNM). Paddy's Knob, 41.8326°S 172.82292°E, 1141 m, 14 Jan 1976, W.J. Knight, 2♀ (00354482, 00354483) (BMNH); 14 Jan 1976, A.K. Walker, 1♂ (00354481), 1♀ (00354484) (BMNH). **Otago:** Between Tarras and Queenstown, 44.93333°S 169°E, 09 Feb 1992, Kovalev, 1♂ (00229467) (ZISP). Christchurch, 43.53333°S 172.66667°E, 17 Jan 1978, J.T. Polhemus, 1♂ (00095330) (AMNH). Nelson, Research Orchard, 41.295°S 173.249°E, 16 Nov 1931, L.J. Durnbleton, Holotype, 1♂ (00085514) (BMNH); Dec 1970, E. Collyer, 2♀ (00271684, 00271685) (AMNH). **PAPUA NEW GUINEA: Morobe Province:** Mount Kaindi, 7.35°S 146.68333°E, 2350 m, 11 Dec 1976, G.F. Hevel and R.E. Dietz IV, 1♂ (00271736) (USNM).

Ausejanus ansevata (Schuh), new combination
Figure 6

Sejanus ansevata Schuh, 1984: 156, figs. 503, 505–507, 514–516 (n. sp., diag., descr., DV, MG, SEM).

Discussion: Recognized by completely brown head, thorax, pronotum, scutellum, and antennae, lack of any coloration on anterior margin of cuneus next to cuneal fracture, lack of a transverse fascia (Schuh, 1984: fig. 503); and completely yellow legs and coxae. This species was described by Schuh (1984) in *Sejanus*, yet based on a phylogenetic analysis it groups with the *Ausejanus* clade (Menard and Woolley, in press). S shape of endosoma with a weakly sclerotized secondary gonopore (Schuh, 1984: fig. 514), left paramere with a relatively narrow, elongate posterior process as compared to anterior process (Schuh, 1984: fig. 515), and relatively elongate cuneus (Schuh, 1984: fig. 503) as compared to *Sejanus* sensu strictu clearly place this taxon in *Ausejanus*.

Description: See Schuh (1984).

Hosts: Unknown; collected at lights.

Distribution: New Caledonia.

HOLOTYPE: **NEW CALEDONIA:** Anse Vata, November 16, 1958, at light, C.R. Joyce collector, 1 ♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **NEW CALEDONIA: Province Sud:** Anse Vata: 22.31666°S 166.43305°E, 23 Oct 1958, C.R. Joyce, Light Trap, paratype, 1 ♂ (00321189) (BPBM); 08 Nov 1958, C.R. Joyce, paratype, 2 ♂ (00196089, 00196090) (AMNH), Light Trap, paratype, 4 ♂ (00321185–00321188) (BPBM); 16 Nov 1958, C.R. Joyce, Light Trap, paratype, 1 ♂ (00321190) (BPBM). Anse Vata, 16 Nov 1958, C.R. Joyce, Light Trap, 1 ♂ (00095331) (AMNH).

Ausejanus arvensus, new species
Figures 6, 9H; plate 2

DIAGNOSIS: Distinguished from other species of *Ausejanus* by combination of a transparent, incomplete fascia restricted to claval suture, pale brown to mauve hemelytra, and dark reddish-brown posterior margin of cuneus in male (pl. 2). Female similar in fascia pattern but usually with white pigment within fascia, and darker-brown coloration of hemelytra and posterior margin of cuneus.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.56–3.86, width pronotum 0.95–1.02, and maximum width across hemelytra 1.19–1.34. COLORATION: Dark brown, pale brown, and white. Head dark brown. Antennal segment 1 gold, remaining antennal segments dark brown. Labial segments 1 and 2 gold, segments 3 and 4 dark brown. Eyes dark red. Thorax, pronotum, scutellum dark brown. Thoracic pleura dark brown. Procoxae gold, meso- and metacoxae dark brown basally, gold anteriorly. Pro- and mesofemora gold, metafemora gold basally, pale brown on anterior half. Tibiae gold, metatibia with parallel rows of dark spicules. Clavus dark brown, lightening to transparent laterally along claval suture ¾ distance anteriorly from base of corium to form partial fascia. Transparent area of partial fascia thickest in anterior portion of hemelytra, corresponding to ⅓ distance of corium; remaining portion of hemelytra toward cuneus pale brown to pale reddish brown (pl. 2). Cuneus with pigmented white band along basal margin for less than a third of cuneal length, dark brownish red for posterior lobes near distal margins with membrane. Membrane pale brown with some dark pigmentation around veins. STRUCTURE: Eyes in lateral view encompass total height of head, vertex width less than width of an eye. Antennal segment 2 just longer than 1.25 times total head width. Remaining structure characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.77–3.07, width pronotum 0.92–0.99, width at widest part of hemelytra 1.09–1.29. STRUCTURE: Vertex equal to half total head width. Length antennal segment 2 just wider than total head width. COLORATION: Similar to male, but showing variation on following characteristics. antennal segment 2 with larger portion gold basally, antennal segment 2 with minimal lightening to gold proximally. Partial fascia usually containing white pigment, hemelytra and cuneus posteriorly dark brown to dark reddish brown, anterior portion of cuneus with wider band of white pigmentation along margin.

ETYMOLOGY: Named for the type locality Arve River Park.

HOSTS: Primarily *Ozothamnus sp.* R.Br. (Asteraceae), with some records on *Leptospermum lanigerum* (Myrtaceae), *Olearia axillaris* (Asteraceae), and *Oxybolium arborescens* (Fabaceae).

DISTRIBUTION: South Australia and Tasmania.

DISCUSSION: This species appears to be extremely close to *A. albisignatus* in hemelytral transverse fascia patterning and general coloration; however, in male *A. arvensus* the anterior coloration of the hemelytron is distinctly pale as compared to other species of *Ausejanus* (pls. 1–2). This species also has the metafemur gold to pale brown instead of red as in *A. albisignatus*. Lastly, unlike *A. albisignatus* and some of the other more widely distributed taxa that feed on a wide variety of Fabaceae and Myrtaceae, *A. arvensus* appears to be largely host specific on *Ozothamnus* spp. (Asteraceae).

HOLOTYPE: **AUSTRALIA: Tasmania:** 13.8 km N of Crabtree on Jeffery's track (C6180), 42.88893°S 147.05144°E, 643 m, 21 Jan 2004,

M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. NSW staff NSW658244, 1♂ (00272387) (AM).

PARATYPES: **AUSTRALIA: South Australia:** Eyre Penin.; Cape Donington, 34.71666°S 135.98333°E, 10 m, 14 Aug 1978, W.C. Gagne, *Olearia axillaris* (DC.) Benth. (Asteraceae), 1♂ (00318956), 3♀ (00318953–00318955) (BPBM). **Tasmania:** 0.5 km NW of Southwest National Park (Maydena access): Huon Campground, off of Scotts Peak Rd, 43.03732°S 146.29721°E, 276 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658232, 4♂ (00272411–00272414) (AMNH). 4.1 km N of Huon Hwy & Pilliger Ave intersection, Mt. Wellington, The Springs, 42.91707°S 147.25546°E, 684 m, 15 Jan 2004, M D. Schwartz and P.P. Tinerella, *Oxylobium arborescens* R.Br. (Fabaceae), det. NSW staff NSW658211, 4♂ (00108565, 00272391–00272393), 3♀ (00272415–00272416, 00272418) (AMNH). 13.8 km N of Crabtree on Jeffery's track (C6180), 42.88893°S 147.05144°E, 643 m, 21 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. NSW staff NSW658244, 1♀ (00272407) (AM), 1♀ (00272408) (AMNH), 1♂ (00272386) (ANIC), 1♂ (00272385) (QM). 53.1 km S of Wynyard on Murchison Hiway (A10) near pond on S side of road, 41.30545°S 145.59042°E, 570 m, 25 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. NSW staff NSW658258, 1♀ (00272410) (AMNH), 1♀ (00272409) (QM), 1♂ (00272388) (SAMA), 1♂ (00272390) (TAMU), 1♂ (00272389) (USNM). Arve River Picnic Ground on C632, 43.15874°S 146.8068°E, 172 m, 21 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus ferrugineus* (Labill.) Sweet (Asteraceae), det. Field ID, 1♀ (00108563) (AMNH), 1♂ (00108579) (UNSW), 1♀ (00272395) (USNM). Tarraleah Power Station grounds, on A10, NW of Hamilton, 42.29848°S 146.4584°E, 366 m, 22 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. Field ID, 1♂ (00272394), 1♀ (00272403) (AM), 1♂ (00108557), 7♀ (00108564, 00272396–00272397, 00272401, 00272404–00272406) (AMNH), 1♀ (00272398) (ANIC), 1♀ (00272399) (SAMA), 1♀ (00272400) (TAMU), 1♀ (00272402) (UNSW).

Ausejanus bournda, new species
Figures 6, 10B, C; plate 2

DIAGNOSIS: Nearly identical in coloration to *A. schwartzi* and *A. minutus* except for completely dark brown hemelytron with a weakly transparent area in corium along medial portion of claval sutures (pl. 2). Recognized by apically gold coxae, shape of left paramere and phallotheca, and intermediate size between *A. schwartzi* and *A. minutus*. Female nearly identical in coloration to females of *A. schwartzi* and *A. minutus*.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.22–3.55, width pronotum 0.90–0.94, maximum width across hemelytra 1.09–1.18. COLORATION: Dark brown, with weakly transparent area in corium along medial portion of claval sutures (pl. 2), and anterior margins of cuneus white. Head dark brown. All antennal segments brown, with segment 2 shade darker brown. Labium dark brown. Eyes dark red to purple. Thorax, pronotum, and scutellum dark brown. Thoracic pleura dark brown, Dorsolateral margin of metepisternum and scent gland with thin white margin. All coxae entirely dark brown with apical lightening to gold at joint with trochanter. Profemora dark basally, gold distally, meso- and metafemora completely dark brown. Pro- and mesotibiae segments brown basally, gold distally, metatibia are completely dark brown and with parallel rows of dark spicules. All tarsomeres are dark brown. Hemelytra dark brown, with weakly transparent area in corium along medial portion of claval sutures, at most ¼ area of cuneus along anterior margin of cuneal fracture distinctly white with reddish tinge along anterior margins with cuneal fracture. Abdomen dark brown. STRUCTURE: Vertex width narrower than width of one eye, eyes nearly total height of head when head viewed laterally. Length of antennal segment 2 1.33 total head width. GENITALIA: **Phallotheca:** L-shaped, relatively narrow with apex gently tapering toward twisted point (fig. 10C) **Left Paramere:** Posterior process relatively short and closer in size to

anterior process, apex of posterior process directed ventrally (fig. 10B).

Female: Macropterous. Total length 2.67–3.07, width pronotum 0.87–0.95, width at widest part of hemelytra 1.14–1.24. STRUCTURE: Vertex nearly takes up half total head width. Length antennal segment 2 1.2 times total head width. COLORATION: Hemelytron darker in than in male, transverse fascia much more pronounced with anterior of corium completely white with fascia and with anterior margin transitioning from gold brown into dark brown rather than relatively defined line in male (pl. 2), profemur darker with apical lightening to gold at joint with protibia less pronounced, dorsoposterior margin of metepisternum with wider white margin, and cuneus with larger lobes white.

ETYMOLOGY: Named for the collecting site of Bournda National Park in New South Wales. Noun in apposition.

HOSTS: Myrtaceae, specifically *Melaleuca processillaris* (Sol. Ex Gaertn.) and *Kunzea ambigua* (Sm.).

DISTRIBUTION: New South Wales.

DISCUSSION: The coloration in this species is very similar to *A. minutus* and *A. schwartzi.* All three species have the anterior process of the left paramere relatively short compared to the remaining *Ausejanus* species. However, the subtle differences in coloration in the males, the angle of the apex of the posterior process of the left paramere, and the structure of the phallotheca clearly indicate they are separate species.

HOLOTYPE: **AUSTRALIA: New South Wales:** Bournda National Park, North Wallagoot, Turingal Head, 36.78452°S 149.9568°E, 16 m, 20 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Melaleuca armillaris* (Sol. ex Gaertn.) Sm. (Myrtaceae), det. NSW staff NSW658203, 1♂ (00272738) (AM).

PARATYPES: **AUSTRALIA: New South Wales:** Bournda National Park, North Wallagoot, Turingal Head, 36.78452°S 149.9568°E, 16 m, 20 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Kunzea ambigua* (Sm.) Druce (Myrtaceae), det. NSW staff NSW658199, 1♂ (00089931) *Melaleuca armillaris* (Sol. ex Gaertn.) Sm. (Myrtaceae), det. NSW staff NSW658203, 2♀ (00272726, 00272727) (AM), 1♂ (00272739), 3♀ (00272723, 00272728, 00272730) (AMNH), 1♂ (00272737), 2♀ (00272721, 00272729) (ANIC), 1♂ (00272740), 1♀ (00272724) (QM), 1♂ (00272741), 1♀ (00272725) (TAMU), 1♀ (00272722) (UNSW), *Kunzea ambigua* (Sm.) Druce (Myrtaceae), det. NSW staff NSW658199, 1♂ (00274150) *Melaleuca armillaris* (Sol. ex Gaertn.) Sm. (Myrtaceae), det. NSW staff NSW658203, 1♀ (00272731) (USNM).

Ausejanus cordatus, new species
Figures 6, 9B; plate 2

DIAGNOSIS: Unique within *Ausejanus* for its small size, white, heart-shaped color pattern on predominantly dark red to brown hemelytra (pl. 2), relatively short antennal segment 2, and completely yellow color of antennal segments 2 and 3.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.38–2.87, width pronotum 0.76–0.93, maximum width across hemelytra 0.89–1.09. COLORATION: Dark red, brown, and white. Head brown to burgundy. Antennal segments 1 through 3 yellow, with pale brown tinge at distal ends of segments 2 and 3 in some populations; segment 4 completely pale brown. Labial segment 1 bright red, segments 2 and 3 yellow, and segment 4 brown. Thorax, pronotum, and scutellum dark red to brown, scent glad paler ventrally adjacent to coxae. All coxae yellow. Pro- and mesofemora yellow, metafemora yellowish basally, dark red distally. Tibiae gold, metafemora with parallel rows of dark spicules. Basal tarsomeres gold, distally dark brown. Hemelytra dark red, with white pigmented partial fascia anteriorly covering medial portion of clavus and portion of corium parallel to clavus, forming heart shape when hemelytra are joined (pl. 2). Extreme distal margin of corium anterior to cuneal fracture weakly white. Cuneus with white pigment along cuneal fracture approximately half distance to apical margin, dark red for remaining lobes. Membrane pale brown with pale brown pigmentation around veins. Abdomen predominantly dark red, with abdominal segments 4–7 paler orange on ventral surface. STRUCTURE: Eyes laterally encompass total height of head, vertex width less than width of an eye. Length of antennal segment 2

slightly longer than total head width. Remaining structure characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.57–2.67, width pronotum 0.90–0.95, width at widest part of hemelytra 1.14. STRUCTURE: Vertex over half total head width. Length antennal segment 2 nearly as wide as total head width. COLORATION: Same as male with exception of scent gland which has larger area white ventrally and cuneus which has larger lobes of white (pl. 2), and segment 2 having larger portion of area gold.

ETYMOLOGY: From the Latin *cordatus,* for the heart-shaped white patterning on the hemelytron.

HOSTS: Tiliaceae.

DISTRIBUTION: Western Australia and Northern Territory.

DISCUSSION: *Ausejanus cordatus* is a particularly attractive species whose unique color pattern appears to be consistent across populations and localities, making it relatively easy to identify. It also has a relatively short antennal segment 2 only slightly longer than the total width of the head, like *A. iris,* but the distinctive coloration patterns of the hemelytron clearly delineate the two.

HOLOTYPE: **AUSTRALIA: Western Australia:** 4.5 km NW of jct of Blowholes Rd and North West Coastal Hiway, N of Carnarvon, 24.72267°S 113.7158°E, 28 m, 27 Oct 2004, Cassis, Wall, Weirauch, Tatarnic, Symonds, *Corchorus carnarvonensis* Halford (Tiliaceae), det. PERTH staff PERTH6988660. 1♂ (00196684) (WAMP).

PARATYPES: **AUSTRALIA: Northern Territory:** 32 km N of Elliott, 17.55205°S 133.54269°E, 211 m, 07 Apr 1980, G.F. Hevel and J.A. Fortin, 2♂ (00271737, 00271738) (USNM). **Western Australia:** ***West Kimberley Co.:*** 8 km S of Cape Bertholet, 17.25°S 122.16667°E, 1 m, 16 Apr 1977, D.H. Colless, 1♀ (00168826) (ANIC); 19 Apr 1977, D.H. Colless, 1♂ (00168805) (ANIC). 4.5 km NW of jct of Blowholes Rd and North West Coastal Hiway, N of Carnarvon, 24.72267°S 113.7158°E, 28 m, 27 Oct 2004, Cassis, Wall, Weirauch, Tatarnic, Symonds, *Corchorus carnarvonensis* Halford (Tiliaceae), det. PERTH staff PERTH6988660, 1♂ (00196683), 1♀ (00196689) (AMNH), 1♂ (00196116), 1♀ (00196115) (UNSW), 1♂ (00196682), 1♀ (00196685), 3♂ (00196117–00196118, 00196681), 4♀ (00196686–00196688, 00196690) (WAMP). Kimberley Dist., Dampier Peninsula, Barred Ck, 17.5625°S 122.2005°E, 18 May 1999, G. Cassis, R. Silveira, 1♂ (00090970) (AM). Kimberley Dist., Great Northern Hiway 59 km SW of Roebuck Plains Roadhouse, 18.25001°S 122.3845°E, 26 May 1999, G. Cassis, R.Silveira, *Corchorus sidoides* F. Muell. (Tiliaceae), det. PERTH staff PERTH5635993, 1♂ (00393323), 1♀ (00393324) (AM). Pilbara Dist., Shay Gap Rd 15.1 km NE of Muccan Homestead, 20.22244°S 120.1494°E, 130 m, 27 May 1999, G. Cassis, R. Silveira, 1♂ (00090971) (AM).

Ausejanus femoralis (Carvalho and Gross), new combination

Figures 6, 9F; plate 2

Sejanus femoralis Carvalho and Gross, 1982: 27, figs. 37–39, 109 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Unique among *Ausejanus* species by having ventral surface of abdomen a different color than thorax and head in female, relatively large portion of cuneus pigmented with white in male (pl. 2), and cuneus almost completely pigmented white in female.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.32–3.79, width pronotum 0.96–1.13, maximum width across hemelytra 1.14–1.29. COLORATION: Brown, gold, and white. Head dark brown. Antennal segment 1 gold basally, dark brown distally; remaining antennal segments dark brown. Labial segments 1 and 2 gold, segments 3 and 4 dark brown. Eyes dark red. Thorax, pronotum, scutellum dark brown. Thoracic pleuron mostly dark brown, pale on dorsal half of posterior margin. Procoxae gold, meso- and metacoxae dark brown basally gold anteriorly. Pro- and mesofemora gold, metafemur gold basally, dark brown on anterior ⅓. Tibiae dark gold, metatibiae with parallel rows of dark spicules. Anterior of clavus dark brown, anterior of corium with transparent yellowish-white fascia not crossing onto clavus until approximately ¾ of distance of clavus from apical margin, clavus transitioning back into dark brown for

remaining posterior portion (pl. 2). Apical half of corium medium brown. Cuneus with transparent yellowish-white band for over half of cuneal length, dark brown for posterior lobes near distal margins with membrane. Membrane brown with some dark pigmentation around veins. Abdomen dark brown. STRUCTURE: Eyes in lateral view encompass total height of head, vertex width less than width of an eye. Length of antennal segment 2 nearly 1.5 times head width. Remaining structural characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 3.02–3.61, width pronotum 1.06–1.23, width at widest part of hemelytra 1.24–1.49. STRUCTURE: Vertex less than half total head width. Length antennal segment 2 is 1.2 times total head width. COLORATION: Same as male except antennal segment 2, which has larger area gold and cuneus almost completely transparent yellowish-white (pl. 2). Abdomen unique for *Ausejanus* females with ventral surface completely yellow, contrasting with primarily dark brown thorax and head.

HOSTS: Araliaceae, Rhamnaceae, and Fabaceae.

DISTRIBUTION: New South Wales, Queensland.

DISCUSSION: The unique color pattern of the abdomen makes recognition of females of this species fairly easy, which is not the case for many of the other *Ausejanus* species (e.g., *A. albisignatus*).

HOLOTYPE: **AUSTRALIA: Queensland:** Brisbane, 21.x.1964, H.A. Rose. 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** Ashton Park, 33.84819°S 151.24394°E, 3 m, 15 Oct 1958, M.I. Nikitin, 1♂ (00372014) (AM), 11♂ (00173984–00173994), 14♀ (00173995–00174008) (BMNH). Dead Horse Gap 9 km from Thredbo Snowy Mts., 36.52351°S 148.2649°E, 1545 m, 11 Feb 1979, D.K. McAlpine & B.J. Day, 1♂ (00393647), 1♀ (00393648) (AM). Kuring-gai Chase N.P., 33.651°S 151.201°E, 06 Nov 1989, G. Cassis, 8♀ (00088841–00088846, 00088848–00088849) *Pomaderris* sp. (Rhamnaceae), 1♀ (00088847) (AM). Myall Lakes National Park, 10.3 km S Seal Rocks Rd on Hawks Nest Rd, 32.50001°S 152.35°E, 5 m, 20 Oct 1995, Schuh and Cassis, *Astrotricha longifolia* Benth. (Araliaceae), det. B.M. Wiecek 1996 NSW 395907, 1♂ (00272648), 42♀ (00272669, 00272671–00272711) (AMNH). Narranbeen, 33.71666°S 151.3°E, 28 Oct 1922, A. Musgrave, paratype, 1♀ (00393300) (AM). Neilson Park, 28.8239°S 153.29447°E, 12 m, 23 Oct 1932, K.K. Spence, paratype, 1♀ (00393301) (AM). Royal National Park, Warumbul Picnic Area, 34.06667°S 151.1048°E, 20 m, 14 Nov 2001, Cassis, Schuh, Schwartz, Silveira, *Acacia irrorata subsp. irrorata* Sieber ex Spreng. (Fabaceae), det. NSW staff NSW666408, 1♂ (00274234) (AM). St. Forest W of Ulladulla, above Carters Creek, 35.5152°S 150.0346°E, 200 m, 11 Nov 1995, Schuh and Cassis, *Astrotricha latifolia* Benth. (Araliaceae), det. B.M. Wiecek 1996 NSW 396004, 11♂ (00089903, 00089910–00089912, 00089918, 00089922–00089923, 00089934, 00274141–00274143), 26♀ (00089901–00089902, 00089904–00089909, 00089913–00089914, 00089916–00089917, 00089919–00089921, 00089924–00089927, 00089932–00089933, 00274144–00274145, 00274148, 00372012–00372013) (AM), *Astrotricha latifolia* Benth. (Araliaceae), det. B.M. Wiecek 1996 NSW 396004, 14♂ (00195985, 00272630, 00272632–00272636, 00272638, 00272640–00272644, 00272647), 26♀ (00272629, 00272631, 00272637, 00272639, 00272646, 00272649–00272668, 00272670) (AMNH). [The Royal] National Park, 34.072°S 151.05789°E, 20 m, Oct 1932, K.K.B., paratype, 2♀ (00393299, 00393302) (AM).

Ausejanus iris, new species
Figures 6, 9J; plate 2

DIAGNOSIS: Distinguished from other members of *Ausejanus* by overall dark coloration, completely dark pro-, meso-, and metafemora, and dark brown to burgundy hemelytron with a complete transverse fascia possessing white pigmentation in males (pl. 2). Female with a white transverse fascia on a dark brown to burgundy hemelytron. Coloration similar to some populations of *A. albisignatus*, but males and females with both pro- and mesofemora completely dark brown, both sexes with white pigmentation in transverse fascia, and wider vertex relative to total width of head.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.67–2.97, width pronotum 0.88–0.92, maximum width across hemelytra 1.04–1.09. COLORATION: Dark brown, with white transverse fascia on anterior margin of hemelytra and anterior margins of cuneus. Head dark brown. All antennal segments dark brown. Labium dark brown. Eyes dark red to purple. Thorax, pronotum, and scutellum dark brown. Thoracic pleura dark brown. Procoxa pale brown, meso- and metacoxa dark brown basally and apically pale brown. All femora pale brown. All tibiae pale brown, metatibia weakly darker and with parallel rows of dark spicules. Basal tarsomeres light, distally dark brown. Hemelytra brown, with anterior margin corium and along anterior margin of clavus dark brown adjacent to scutellum, white transverse fascia with white pigmentation focused on claval suture, majority of medial area of hemelytron dark brown to burgundy coloration (pl. 2), at least half of area of cuneus along anterior margin of cuneal fracture distinctly white, sometimes with an orange tinge along lateral margins. Abdomen dark brown, with abdominal sclerites 3–7 paler. STRUCTURE: Vertex width slightly wider than width of one eye, eye height nearly total height of head. Length of antennal segment 2 slightly longer than total head width. GENITALIA: See generic description.

Female: Macropterous. Total length 2.48, width pronotum 0.92, width at widest part of wings 1.09. STRUCTURE: Vertex occupying over half of total head width. Length antennal segment 2 equal to total head width. COLORATION: Same as male with following exceptions: procoxae gold rather than pale brown, dorsoposterior margin of metepisternum with thin yellow line, and cuneus white on anterior two-thirds.

ETYMOLOGY: Named for the Iris River, near the collecting locality in Tasmania; noun in apposition.

HOSTS: *Ozothamnus hookeri* Sond. (Asteraceae).

DISTRIBUTION: Tasmania.

DISCUSSION: This species is very similar in coloration and size to *Ausejanus minutus* collected on Myrtaceae hosts in Tasmania, females of both species having the anterior margin of the transverse fascia gold. However, the combination of males of *A. iris* with white pigmentation and the asteraceous host plant (*Ozothamnus*) clearly separate the two. *Ausejanus arvensus* is also found on *Ozothamnus* spp., but neither males nor females have white pigmentation and the hemelytron is paler.

HOLOTYPE: **AUSTRALIA: Tasmania:** 12 km N of Cradle Valley on Iris River, 41.55148°S 145.9622°E, 782 m, 26 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus hookeri* Sond. (Asteraceae), det. NSW staff NSW658265 1♂ (00108569) (AM).

PARATYPES: **AUSTRALIA: Tasmania:** 12 km N of Cradle Valley on Iris River, 41.55148°S 145.9622°E, 782 m, 26 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus hookeri* Sond. (Asteraceae), det. NSW staff NSW658265, 2♂ (00108567, 00108571) (AM), 1♂ (00108572), 1♀ (00108570) (AMNH).

Ausejanus luteoelytratus (Carvalho and Gross), new combination
Figure 7; plate 3

Sejanus luteoelytratus Carvalho and Gross, 1982: 25, figs. 31–33, 107 (n. sp., descr., DV, MG).

DIAGNOSIS: Unique among *Ausejanus* species for its combination of primarily whitish hemelytra (pl. 2), white pigmented cuneal stripe, relative small size; completely gold femora on all legs with metafemora having red maculation on distal portion, and mostly gold antennal segment 2.

REDESCRIPTION: *Male*: Macropterous, small sized, elongate, and parallel sided. Total length 3.22–3.46, width pronotum 0.84–0.89, maximum width across hemelytra 0.99–1.09. COLORATION: Dark brown and white. Head dark brown. Antennal segment 1 gold, segment 2 primarily gold with small dark band at joint with antennal segment 3, remaining antennal segments gold brown to dark brown. Labial segments 1 and 2 gold, segments 3 and 4 dark brown. Eyes dark red to deep purple. Thorax, pronotum, scutellum dark brown. Thoracic pleura dark brown, pale on dorsal half of posterior margin. Coxae dark brown basally, gold anteriorly. Femora and tibiae gold, metatibiae with parallel rows of dark spicules. Basal tarsal segments gold, darkening distally. Primarily

tan in coloration, with paler transparent band corresponding to transverse fascia across anterior part of hemelytra medially across clavus, darkening with dispersed transparent brown pigmentation distally around tip of clavus and claval suture and with deeper brown color around margin of distal part of corium next to basal margin of membrane, forming dark brown inverted-V pattern (pl. 2). Cuneus with pigmented white band along basal margin for approximately third of cuneal length, dark brown for remaining posterior lobes near distal margins with membrane. Membrane pale brown with some dark pigmentation around veins. Abdomen dark brown. STRUCTURE: Eyes in lateral view encompass height of head, vertex width approximately width of eye. Remaining structure characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.30–2.42, width pronotum 0.76–0.84, width widest part of wings 1.04–1.09. STRUCTURE: Vertex over half total head width. Length antennal segment 2 over 1.25 times total head width. COLORATION: Similar to male, anterior portion of cuneus with wider white band along margin.

HOSTS: Primarily Chenopodiaceae, with a few specimens found on *Cassinia* sp. (Asteraceae) and *Acacia* sp. (Fabaceae).

DISTRIBUTION: South Australia and Queensland.

DISCUSSION: This species is most similar to *Ausejanus arvensus* in the tan and mauve coloration of the hemelytra, but *Ausejanus luteoelytratus* can be recognized by the smaller size, the dark inverted-V pigmentation pattern on the distal margins of the corium, the presence of faint transverse fascia that runs across the clavus and the corium, the dark brown anterior portion of the cuneus, the maculation on the metafemur, and the paler antennal segment 2.

HOLOTYPE: **AUSTRALIA: South Australia:** Northern Flinders Ranges, Yudnamutana Gorge, 3.vi.1976, P.B. McQuillan. (Reg. Nos 121, 073–4). 1♂ (SAM).

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** 8.2 km E of Mungallala, 26.46401°S 147.6248°E, 560 m, 31 Oct 1998, Schuh, Cassis, Silveira, *Acacia* sp. (Fabaceae), det. Royal Botanic Gardens NSW, 1♀ (00197203), *Cassinia* sp. (Asteraceae), det. Det: Royal Bot Gard. NSW, 4♀ (00195651, 00195998, 00371769–00371770) (AMNH). **South Australia:** 5 km N Yunta toward Arkaroola, 32.53334°S 139.55°E, 250 m, 29 Oct 1995, Schuh and Cassis, undetermined sp. (Chenopodiaceae), det. R.T. Schuh NSW 395955, 15♂ (00273380–00273384, 00273386–00273395), 8♀ (00273397–00273399, 00273408–00273412), 1♀ (00273414) (AMNH). 52 km SW of Yunta, 32.83335°S 139.1°E, 500 m, 30 Oct 1995, Schuh and Cassis, undetermined sp. (Chenopodiaceae), det. R.T. Schuh NSW 395955, 6♂ (00273374–00273379), 5♀ (00273401–00273405) (AMNH).

Ausejanus macrozonata (Carvalho and Gross), new combination
Figure 7; plate 3

Leucophoroptera macrozonata Carvalho and Gross, 1982: 23, fig. 117 (n. sp., descr., disc., DV).

DIAGNOSIS: Recognized by deep red hemelytral coloration, burgundy-brown head, thorax, pronotum, and scutellum, white pigmentation in complete transverse fascia; and completely dark red pro-, meso- and metafemora. Females further recognized by being only *Ausejanus* species with nearly completely white anterior portion of hemelytron with burgundy to brown posterior (pl. 3).

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.97, width pronotum 0.88, maximum width across hemelytra 0.99. COLORATION: Maroon to burgundy, hemelytra primarily burgundy with transverse, white pigmented fascia on anterior portion. Head dark to medium brown. Antennal segments 2, 3, and 4 gold, segments 2 gold basally, dark distally. Labium gold basally, brown distally. Eyes ruby red to dark red. Thorax, pronotum, and scutellum dark burgundy, Dorsolateral margin of metepisternum with thin yellow margin. All coxae dark red to burgundy. Pro- and mesofemora dark burgundy with gold coloration at joint with tibiae, metafemora completely dark red to burgundy. Tibiae gold, metatibia with parallel rows of dark spicules. Basal tarsomeres light, distally dark brown. Hemelytra primarily burgundy with complete yellowish-white transverse fascia on

anterior portion containing white pigmentation in portion that transverses clavus and interior margins of corium (pl. 3). Cuneus white along fracture with an orange lateral margin, coloration extending approximately ⅓ of total area, remainder of cuneus dark red to brown. Abdomen burgundy. STRUCTURE: Eyes in lateral view nearly encompass total height of head, vertex width greater than width of an eye. Length of antennal segment 2 slightly shorter than 1.25 times total head width. Remaining structural characteristics as in generic description.

GENITALIA: As in generic description.

Female: Macropterous. Total length 2.52–2.57, width pronotum 0.84–0.88, width at widest part of wings 1.04–1.06. STRUCTURE: Vertex takes up over half total head width. Segment 2 nearly 1.10 times total head width. COLORATION: Same coloration as male with exception of hemelytron and dorsolateral surface of metepisternum. Anterior portion of corium and clavus nearly completely pigmented white from median of hemelytron to just subapical of bases and interior margins abutting scutellum which transition into gold brown (pl. 3). Females also with at least anterior half of cuneus and greater portion of dorsolateral surface of hemelytron white.

HOSTS: *Acacia leptostachya* Benth (Fabaceae). Also collected at lights.

DISTRIBUTION: Western Australia and Queensland.

DISCUSSION: This species was previously known only from the poorly preserved and teneral female holotype. However, the relatively large white portion of the anterior margin of the hemelytron and the completely dark-red femora are diagnostic, allowing the identification of three recently collected specimens, including the male. This species is similar to *A. cordatus* in possessing distinct white pigmentation and deep red coloration of the hemelytra in both the male and female, however the white patterning is more restricted on the medial portion of the hemelytron in *A. cordatus* and the pro- and mesofemora are gold instead of burgundy as in *A. macrozonata*.

HOLOTYPE: **AUSTRALIA: Queensland:** Split Rock, 14 km S of Laura, 23–16.vi. 1975, G.B. Monteith. 1 ♀ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** ca. 30 km SE of Chillagoe, on Burke Developmental Rd, 17.36519°S 144.71405°E, 547 m, 01 Jun 2006, Cassis, Barrow, Finlay, Symonds, *Acacia leptostachya* Benth. (Fabaceae-Mimosaceae), det. RBG staff, 1♀ (00392784) (AMNH). **Western Australia:** Pilbara Dist., Shay Gap Rd 15.1 km NE of Muccan Homestead, 20.22244°S 120.1494°E, 130 m, 27 May 1999, G.Cassis, R.Silveira, 1♂ (00195679), 1♀ (00195680) (AM).

Ausejanus mcdonaldi (Carvalho and Gross), new combination
Figure 7; plate 3

Sejanus mcdonaldi Carvalho and Gross, 1982: 21, figs. 22–24, 103 (n. sp., descr., disc., DV, MG).
Sejanus melaleucae Carvalho and Gross, 1982: 20, fig. 120 (n. sp., descr., disc., DV). NEW SYNONYMY.

DIAGNOSIS: Body and hemelytra in male almost completely brown, whereas majority of *Ausejanus* species with at least a partial to complete fascia across anterior portion of hemelytra. In addition, male with reduced pigmentation of white stripe on anterior margin of cuneus; relatively thick segment 2; and smaller eyes than other congeners. Female paler in coloration, hemelytra with a golden-brown stripe along apical margin of cuneus orange rather than white, and lacking a partial or complete fascia (pl. 3).

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.32–3.89, width pronotum 0.86–1.10, maximum width across hemelytra 1.09–1.39. COLORATION: Brown. Head dark brown. All antennal segments dark brown. All labial segments dark brown. Eyes dark red. Thorax, pronotum, scutellum dark brown. Thoracic pleuron dark brown. Procoxae gold, meso- and metacoxae dark brown basally, gold anteriorly. Pro- and mesofemora gold brown, metafemora dark brown. Tibiae gold brown, metatibiae with parallel rows of dark spicules. Tarsi dark brown. Hemelytra completely dark brown to brown, lack partial or complete fascia (pl. 3). Cuneus with yellowish-white pigmented band present as thin line along anterior margin of cuneus to thick band with width approximately ¼ total

length of cuneus, posterior of cuneus dark brown. Abdomen dark brown with segments 3–7 paler brown. STRUCTURE: Diameter of antennal segment 2 wide. Eyes relatively small and not total height of head in lateral view, width of vertex wider than width of one eye. Length segment 2 nearly as long as 1.5 times total head width. Remaining structural characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.97–3.36, width pronotum 0.94–1.06, width at widest part of wings 1.34–1.39. STRUCTURE: Vertex over half of total head width. Length segment 2 1.2 times total head width. COLORATION: Female generally paler than male. Antennal segment 1 gold brown, segment 2 golden brown basally then transitioning into dark brown distally for approximately halfway along segment length, segments 3 and 4 dark brown. Hemelytra primarily gold-brown in coloration, without partial or complete fascia on anterior portion. Cuneus yellowish orange along anterior margin with hemelytra for less than ¼ total length, remaining posterior portion gold brown to darker brown.

HOSTS: Fabaceae and Myrtaceae.

DISTRIBUTION: Southeastern and southern Australia.

DISCUSSION: This species has a relatively high amount of sexual dimorphism in coloration compared to other species of *Ausejanus,* with the male darker in color than the female and having a thicker and completely dark brown antennal segment 2. The female type specimen of *S. melaleucae* is identical to the female of *A. mcdonaldi,* which can have a dark brown or paler brown coloration of the hemelytron in the same population. Additionally, both nominal species are found in the same geographic area. Male paratypes from New South Wales show a larger amount of white pigmentation on the anterior portion of the cuneus than a majority of the specimens recently collected in Tasmania, but the remainder of the coloration and structure is consistent across all specimens. For these reasons we are treating the two species as synonyms.

HOLOTYPE: **AUSTRALIA: Tasmania**: Hugel River, Lake St Clair, 15.ii.1955, sweeping shrubs, T.E. Woodward 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** Dandahra cr. Gwdir Hwy, 29.51424°S 152.31264°E, 1000 m, 29 Nov 1962, E.S. Ross & D.Q. Cavagnaro, paratype, 1♂ (00169074) (SAMA). **Tasmania:** 0.5 km NW of Southwest National Park (Maydena access): Huon Campground, off of Scotts Peak Rd, 43.03732°S 146.29721°E, 276 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658232, 43♂ (00108523, 00272472–00272507, 00272509–00272513, 00272531), 21♀ (00108524, 00108550, 00272557–00272575) (AMNH). 0.5 km N of, Cradle Mountain–Lake St. Clair National Park, boat ramp: Visitor Centre, 42.11581°S 146.1796°E, 756 m, 22 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. Field ID, 50♂ (00108549, 00272419–00272467), 12♀ (00272576–00272587) (AMNH). 2.9 km SE from Southwest National Park (Maydena access): junction Scott's Peak Rd and Frodshams' Pass, 42.83639°S 146.37898°E, 570 m, 17 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia mucronata* Willd. ex H.L.Wendl. (Fabaceae), det. NSW staff NSW658221, 2♂ (00272542, 00272543) (AMNH). Cradle Mountain–Lake St Clair Nat Park, Ronny Creek carpark and Little Kate House vicinity, 41.63579°S 145.94963°E, 868 m, 26 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658262, 5♂ (00108544, 00272468–00272471), 5♀ (00272588–00272592) (AMNH). Mt. Wellington, The Springs, 42.9149°S 147.2465°E, 804 m, 15 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum scoparium* J.R. Forst. & G. Forst. (Myrtaceae), det. Field ID, 11♂ (00108543, 00272519–00272528), 1♀ (00272593) (AMNH). Southwest National Park (Maydena access): Edgar Campground on Scotts Peak Rd, 43.03019°S 146.3497°E, 293 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia dealbata* Link. (Fabaceae), det. NSW staff NSW658235, 1♂ (00108546) *Leptospermum scoparium* J.R. Forst. & G. Forst. (Myrtaceae), det. NSW staff NSW658233, 17♂ (00272514–00272518, 00272529–00272530, 00272532–00272541).

Southwest National Park (Maydena access): junction Scott's Peak Rd and Frodsham's Pass, 42.81372°S 146.3855°E, 500 m, 17 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658220, 1♀ (00272594) (AMNH). Strathgordon, Lake Pedder Chalet, 42.76859°S 146.0461°E, 337 m, 18 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia mucronata* Willd. ex H.L. Wendl. (Fabaceae), det. NSW staff NSW658226, 14♂ (00108545, 00272544–00272556) (AMNH). Tarraleah Power Station grounds, on A10, NW of Hamilton, 42.29848°S 146.4584°E, 366 m, 22 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. Field ID, 1♀ (00272596) (AMNH).

Ausejanus meridionalis (Carvalho and Gross), new combination
Figures 7, 9D; plate 3

Sejanus meridionalis Carvalho and Gross, 1982: 32, fig. 106 (n. sp., descr., disc., DV).

DIAGNOSIS: Distinguishable from other members of *Ausejanus* by combination of relatively smaller size, ruby-red coloration of hemelytra with contrasting white-pigmented complete fascia in male (pl. 3), yellow pro- and mesofemora and ruby red metafemora, and dark brown thorax and abdomen. Coloration similar to *A. albisignatus,* but fascia in latter taxon primarily transparent in male rather than with white pigment in *A. meridionalis*.

REDESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.72–3.19, width pronotum 0.84–0.92, maximum width across hemelytra 0.94–1.11. COLORATION: Dark brown, with hemelytra primarily burgundy to brown in color with transverse, transparent fascia on anterior portion. Head dark to medium brown. Antennal segment 1 gold to pale brown, segments 2 and 4 dark brown, with antennal segment 3 dark brown becoming pale at joint with segment 2. Labium dark brown. Eyes ruby red to dark red. Thorax, pronotum, and scutellum dark brown. Thoracic pleura dark brown. Procoxa entirely pale yellow, meso- and metacoxae dark red basally and gold apically. Pro- and mesofemora gold brown, metafemora dark. Tibiae gold with parallel rows of dark spicules. Basal tarsomeres light, distally brown. Hemelytra primarily dark red to ruby red, with white pigmented complete transverse fascia on anterior portion of hemelytron whose anterior, medial margin passes just posterior to posterior apex of scutellum (pl. 3). Cuneus white pigmented along fracture, extending approximately ½ to ⅓ of cuneus, remainder of cuneus dark red. Membrane pale brown, veins sometimes with subtle red pigmentation. Abdomen dark brown, with abdominal sclerites 3–7 paler. STRUCTURE: Eyes not total height of head in lateral view, width of vertex equivalent to width of one eye. Length of segment 2 nearly as long as 1.33 times total head width. Remaining structure characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.43–2.87, width pronotum 0.86–0.95, width at widest part of wings: 0.99–1.19. STRUCTURE: Vertex taking over half of total head width. Length segment 2 nearly 1.10 times total head width. COLORATION: Similar to male but with following exceptions: hemelytra having broader complete transparent fascia than in male (pl. 3), antennal segment 2 gold basally with darkening toward joint with third antennal segment, and cuneus with larger, white pigmented area along apical fracture margin extending approximately ½ to ⅔ of cuneus, remainder of cuneus dark red.

HOSTS: Primarily Fabaceae, Myrtaceae and Thymelaeaceae.

DISTRIBUTION: South Australia, New South Wales, Victoria, Western Australia, Tasmania.

DISCUSSION: *Ausejanus meridionalis* was described by Carvalho and Gross on the basis of a female holotype, which now is associated with male specimens. Females are fairly easy to associate with the males because both sexes have bright-red hemelytra and a white-pigmented, broad transverse fascia. Males of *A. meridionalis* also have white pigmentation in the transverse fascia, a characteristic that is absent in most *Ausejanus* species.

HOLOTYPE: **AUSTRALIA: South Australia:** Warradale, 1.x.1972. ex *Acacia,* P.McQuillan, (Reg. No. 121,055). 1♀ (SAMA)

SPECIMENS EXAMINED: **AUSTRALIA**: **New South Wales:** Monga State Forest,

35.58333°S 149.91666°E, 26 Nov 1979, Zaytsev, 1♀ (00229493) (ZISP). Nabiac, 4 km SW of, 32.11666°S 152.35°E, 22 Sep 1991, T. Gush, 1♀ (00274267) (AM). **South Australia:** Tea Tree Gully, 34.81928°S 138.72738°E, 220 m, 02 Nov 1957, R.V. Southcott, *Acacia paradoxa* D.C. (Fabaceae), paratype, 1♀ (00169266) (SAMA). **Tasmania:** 0.5 km NW of Southwest National Park (Maydena access): Huon Campground, off of Scotts Peak Rd, 43.03732°S 146.29721°E, 276 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658232, 1♀ (00272026) (AMNH). **Victoria:** 4 km S of Cann River, 37.63335°S 149.1333°E, 100 m, 08 Nov 1995, Schuh and Cassis, *Pultenaea hispidula* R. Br. ex Benth. (Fabaceae), det. P.H. Weston 1996 NSW 395994, 5♀ (00274287–00274288, 00274290–00274292) (AM), *Pultenaea hispidula* R. Br. ex Benth. (Fabaceae), det. P.H. Weston 1996 NSW 395994, 4♀ (00273115, 00273120–00273121, 00273123) (AMNH). Brodribb River, 64 km W of Cann River, 37.2°S 148.5833°E, 50 m, 08 Nov 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. [introduced] (Fabaceae), det. B.J. Conn 1996 NSW 395993, 1♀ (00088891) (AM). Discovery Bay Coastal Park, Quarry Rd carpark area, at beach, 38.11753°S 141.1302°E, 28 m, 07 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Pimelea serpyllifolia subsp. serpyllifolia* R.Br. (Thymelaeaceae), det. NSW staff NSW658128, 69♂ (00059060, 00272840–00272841, 00272843–00272861, 00272863–00272909), 175♀ (00059061, 00272842, 00272910–00272952, 00272955–00273049, 00273090–00273108, 00371771–00371772, 02723077–02723085, 02723087–02723089, 02723092–02723093) (AMNH). Discovery Bay National Park, Swan Lake Beach area, 38.21766°S 141.3098°E, 33 m, 08 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Pimelea serpyllifolia subsp. serpyllifolia* R. Br. (Thymelaeaceae), det. Field ID, 16♂ (00272823–00272838), 25♀ (00273050–00273074) (AMNH). Little Desert National Park, 5–6 km W of McDonald Hiway, 36.61668°S 141.1667°E, 150 m, 03 Nov 1995, Schuh and Cassis, *Acacia acinacea* Lindl. (Fabaceae), det. B.J. Conn 1996 NSW 395983, 17♀ (00273264–00273280) (AMNH). **Western Australia:** 2.3 km E of Esperance on Fisheries Road, 33.81039°S 121.9334°E, 10 m, 23 Nov 1999, R.T. Schuh and G. Cassis, *Melaleuca cuticularis* Labill. (Myrtaceae), det. PERTH staff PERTH 05670357, 1♂ (00371028), 5♀ (00371029–00371033) (AM). 3 km S of Kojonup, Sampson Road, 33.87088°S 117.1648°E, 310 m, 08 Dec 1997, Schuh, Cassis, Brailovsky, Asquith, *Melaleuca rhaphiophylla* Schauer (Myrtaceae), det. PERTH staff PERTH 05879183, 3♀ (00272166–00272168) (AMNH). Bunbury, 33.32711°S 115.63699°E, 10 Dec 1958–22 Dec 1958, A Snell, 1♀ (00168819) (ANIC). King George's Sound, 33.52203°S 115.37277°E, 1900, Unknown, 1♀ (00393690) (AM). Wateroo National Park, 30.26666°S 115°E, 08 Sep 1990, G. Cassis, *Acacia* sp. (Fabaceae), 5♂ (00393752–00393756), 18♀ (00393757–00393774) (AM). Watheroo NP, Jingemia cave entrance, 6 km W of road, 30.264°S 116.002°E, 08 Sep 1990, G. Cassis, 1♂ (00393750), 1♀ (00393751) (AM).

Ausejanus minutus, new species
Figures 7, 10A; plate 3

DIAGNOSIS: *Ausejanus minutus* identical in coloration to *A. bournda*, but recognized by smaller size and differences in shape of left and right parameres. Female nearly identical in coloration to female of *A. schwartzi* (pl. 3).

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.87–3.32, width pronotum 0.80–0.89, maximum width across hemelytra 1.04–1.19. COLORATION: Dark brown, with weakly transparent area in corium along medial portion of claval sutures that forms visible transverse fascia in some specimens, and anterior margins cuneus white. Head dark brown. All antennal segments brown, with segment 2 darker brown. Labium dark brown. Eyes dark red to purple. Thorax, pronotum, and scutellum dark brown. Dorsolateral margin of metepisternum and scent gland with thin white margin. All coxae entirely dark brown with apical lightening to gold at joint with trochanter. Profemora dark basally, gold distally, meso- and metafemora completely dark brown. Pro- and mesotibiae segments brown basally, gold distally, metatibia completely dark brown and with parallel rows of dark spicules. Basal tarsomeres

gold, distally dark brown. Dark brown, with weakly transparent area in corium along medial portion of claval sutures that transverses over clavus and forms complete transverse fascia in some specimens, at most ¼ of area of cuneus along anterior margin of cuneal fracture distinctly white with reddish tinge along anterior margins with cuneal fracture (pl. 3). Abdomen dark brown. STRUCTURE: Vertex width equal to width of one eye, eyes total height of head when head viewed laterally. Length of antennal segment 2 over 1.33 total head width. GENITALIA: **Left Paramere:** Posterior process relatively short and closer in size to anterior process, apex of posterior process directed ventrally (fig. 10A).

Female: Macropterous. Total length 2.43–3.07, width pronotum 0.78–0.99, width at widest part of wings 0.99–1.29. STRUCTURE: Vertex equal to half total head width. Length of antennal segment 2 equal to 1.2 times total head width. COLORATION: As in male with following exceptions: transverse fascia much more pronounced with anterior of corium completely white with fascia and with anterior margin transitioning from gold brown into dark brown rather than relatively defined line in male (pl. 3), profemur with apical lightening at joint with protibia less pronounced, dorsoposterior margin of metepisternum with wider white margin, and cuneus with larger lobes white.

ETYMOLOGY: From the Latin noun for small, due to its relatively small size as compared with other *Ausejanus* species.

HOSTS: Myrtaceae, specifically *Melaleuca ericifolia* Sm. and *Leptospermum lanigerum* Maiden and Betche.

DISTRIBUTION: Tasmania.

DISCUSSION: *Ausejanus minutus* is similar in coloration to *A. bournda* and *A. schwartzi*, but differentiated from the former by the lack of a transverse fascia in the males, and separated from the latter by the relatively narrow posterior process of the left paramere, the wider area of white on the anterior margin of the cuneus, and the pale brown coloration of the hemelytron in females.

HOLOTYPE: **AUSTRALIA: Tasmania:** 0.5 km SE of Couta Rocks: "Murphy's Spring," terminus of C214, Mick Murphy's House, 41.18012°S 144.68716°E, 8 m, 24 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Melaleuca ericifolia* Sm. (Myrtaceae), det. Field ID. 1♂ (00271953) (AM).

PARATYPES: **AUSTRALIA: Tasmania:** 0.5 km NW of Southwest National Park (Maydena access): Huon Campground, off of Scotts Peak Rd, 43.03732°S 146.29721°E, 276 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658232, 2♀ (00272022, 00272024) (AM), *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658232, 5♀ (00272021, 00272025, 00272027–00272029) (AMNH), 1♀ (00272023) (USNM). 0.5 km SE of Couta Rocks: "Murphy's Spring," terminus of C214, Mick Murphy's House, 41.18012°S 144.68716°E, 8 m, 24 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Melaleuca ericifolia* Sm. (Myrtaceae), det. Field ID, 1♂ (00271946), 6♀ (00271987, 00271989, 00271995, 00272000, 00272007, 00272009) (AM), 6♂ (00271948, 00271950, 00271955, 00271957–00271958, 00271984), 29♀ (00271962, 00271969, 00271975–00271980, 00271982–00271983, 00271985–00271986, 00271988, 00271990–00271994, 00271996–00271998, 00272001–00272006, 00272010, 00272012) (AMNH), 2♂ (00271947, 00271954), 5♀ (00271964, 00271972, 00271981, 00272008, 00272011) (ANIC), 1♂ (00271951), 3♀ (00271971, 00271973–00271974) (SAMA), 2♂ (00271944, 00271956), 3♀ (00271966–00271968) (TAMU), 2♂ (00271945, 00271949), 3♀ (00271963, 00271965, 00271999) (USNM). 8 km W of Granville Harbour: C249, 38 km WNW of Zeehan, 41.81038°S 145.03063°E, 12 m, 23 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Melaleuca ericifolia* Sm. (Myrtaceae), det. NSW staff NSW658249, 1♂ (00271961), 3♀ (00272014, 00272018, 00272020) (AM), 1♂ (00271960), 1♀ (00272019) (AMNH), 1♀ (00272016) (ANIC), 1♂ (00271959), 1♀ (00272017) (SAMA), 1♀ (00272015) (TAMU), 1♀ (00272013) (USNM).

Ausejanus neboissi (Carvalho and Gross), new combination
Figures 7, 9C, E; plate 3

Sejanus neboissi Carvalho and Gross, 1982: 11, figs. 1–3, 94 (n. sp., descr., DV, MG).

DIAGNOSIS: Distinguished from other members of *Ausejanus* by predominantly red coloration of head, thorax, abdomen, hemelytra, and membrane veins (pl. 3). Transverse fascia yellowish, unlike clear or white-pigmented fascia of its cogeners.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.02–3.21, width pronotum 0.90–0.99, maximum width across hemelytra 1.04–1.23. COLORATION: Orange, red, and yellow. Bright to brick red. Antennal segment 1 bright red, segment 2 bright red basally and transitioning into dark red distally, segment 3 predominantly dark red with minimal lightening at joint with segment 2, and segment 4 dark red. Labium bright red like head. Eyes dark red. Thorax, pronotum, and scutellum bright red. Thoracic pleura dark red. Procoxa yellow, meso- and metacoxa dark red basally, lightening to gold at joint with trochanter and femora. Pro- and mesofemora orange, metafemora yellowish orange basally, bright red distally. Tibiae gold, metatibiae with parallel rows of dark spicules. Basal tarsomeres gold, distally dark brown. *Hemelytra:* Anterior of corium and clavus orange, with transverse yellow fascia covering most of basal half of corium and middle third of clavus (pl. 3). Apical half of corium bright red. Cuneus orange to yellow for basal ¼, dark red for remaining posterior lobes. Membrane pale brown to beige, with orange-colored veins. Abdomen dark red. SURFACE AND VESTITURE: As in generic description. STRUCTURE: Eyes in lateral view encompass total height of head, vertex width less than width of an eye. Length of antennal segment 2 slightly shorter than 1.2 times total head width. Remaining structure characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.92–3.27, width pronotum 0.99–1.13, width widest part of wings 1.19–1.39. STRUCTURE: Vertex nearly half of total head width. Length segment 2 1.2 times total head width. COLORATION: Same as male with exception of cuneus, which has larger lobes of yellow pigmentation for cuneal fascia.

HOSTS: *Muehlenbeckia florulenta* Meissner (Polygonaceae).

DISTRIBUTION: Eastern Australia.

DISCUSSION: *Ausejanus neboissi* is not a typical member of *Ausejanus* due to its unique red and orange color scheme, but is clearly congeneric given the simple S-shaped endosoma, the shape of the left paramere, and characters of the female genitalia that are diagnostic for the genus.

HOLOTYPE: **AUSTRALIA: Victoria:** Irymple, 25.xi.1964, A. Neboiss. 1♀ (MVMA) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** 45 km N of Quilpie, 26.3423°S 144.3078°E, 280 m, 02 Nov 1998, Schuh, Cassis, Silveira, Light Trap, 11♀ (00090964–00090965, 00130065–00130071, 00130073–00130074) (AM), *Muehlenbeckia florulenta* Meissner (Polygonaceae), det. Det: Royal Bot Gard. NSW NSW427471, 29♂ (00130035–00130063), 2♀ (00130064, 00130072) (AMNH). **South Australia:** 1 km N of Innamincka, Cooper Creek, 27.73124°S 140.7364°E, 120 m, 05 Nov 1998, Schuh, Cassis, Silveira, Light Trap, 2♀ (00089851, 00089852) (AM), 1♂ (00195646) (AMNH). 17.6 km S of Innamincka, 27.88068°S 140.6712°E, 130 m, 06 Nov 1998, Schuh, Cassis, Silveira, *Muehlenbeckia florulenta* Meissner (Polygonaceae), det. Det: Royal Bot Gard. NSW NSW-427467, 2♂ (00090962, 00130034) (AM), 14♂ (00130309–00130310, 00130375–00130386), 28♀ (00130089–00130091, 00130093–00130107, 00130109, 00130111–00130116, 00130311–00130313) (AMNH).

Ausejanus schwartzi, new species
Figures 8, 10C; plate 4

DIAGNOSIS: Distinguished from the other members of *Ausejanus* by overall dark coloration, profemur dark brown basally and golden distally, dark meso- and metafemora, and dark brown hemelytron with thin, white to transparent transverse fascia (pl. 4). Female with complete, white transverse fascia without distinct white pigmentation on light brown hemelytron. Coloration similar to some populations of *A. minutus* and *A. bournda,* but males in former species smaller, without complete transverse fascia, and females with white pigmentation.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.51–3.61, width pronotum 1.03–1.06,

maximum width across hemelytra 1.24–1.29. COLORATION: Dark brown, with thin white transverse fascia on anterior margin of hemelytra and anterior margins of cuneus. Head dark brown. All antennal segments dark brown. Labium dark brown. Eyes dark red to purple. Thorax, pronotum and scutellum dark brown. Thoracic pleura dark brown, Dorsolateral margin of metepisternum and scent gland with thin white margin. All coxae entirely dark brown. Profemur mostly dark brown with distal margin with protibia transitioning to gold most pronounced on ventral surface, meso- and metafemora completely dark brown. Pro- and mesotibiae segments brown basally, gold distally, metatibia completely dark brown and with parallel rows of dark spicules. All tarsomeres dark brown. Hemelytra dark brown, with relatively thin, white transparent transverse fascia whose anterior margin posterior to posterior apex of scutellum but not meeting it and lacking white pigmentation (pl. 4), at least ⅓ of area of cuneus along anterior margin of cuneal fracture distinctly white with reddish tinge along anterior margins with cuneal fracture. Abdomen dark brown. STRUCTURE: Vertex width narrower than width of one eye, eyes total height of head when head viewed laterally. Length of antennal segment 2 just short of 1.5 times total head width. GENITALIA: **Left Paramere**: Posterior process relatively short and closer in size to anterior process, posterior process straight, apex of posterior process directed ventrally (fig. 10D).

Female: Macropterous. Total length 2.87–3.02, width pronotum 1.03–1.08, width at widest part of wings 1.19–1.29. STRUCTURE: Vertex nearly two times head width. Length of antennal segment 2 1.25 times head width. COLORATION: Hemelytron darker than in male, transverse fascia much more pronounced with anterior of corium completely white with fascia and with anterior margin transitioning from gold brown into dark brown rather than relatively defined line in male (pl. 4), dorsoposterior margin of metepisternum with white margin wider than in male, and cuneus which has larger lobes white.

ETYMOLOGY: Named for Michael Schwartz, who collected the majority of the specimens of this species.

HOST: *Leptospermum brevipes* F. Muell. (Myrtaceae).

DISTRIBUTION: New South Wales.

DISCUSSION: This species is very similar in coloration to *A. minutus* and *A. bournda* and all three species feed primarily on Myrtaceae. However, *A. schwartzi* is nearly two times the size of *A. minutus* and *A. bournda*, and the males of *A. schwartzi* have a transverse fascia. Males and females of *A. schwartzi* also may be confused with darker populations of *A. albisignatus* based on similar size, but the dark antennal segment 1, the narrow fascia, and dark pro- and mesofemora in *A. schwartzi* clearly differentiate the two.

HOLOTYPE: **AUSTRALIA: New South Wales:** 20 km E of Retreat (W. of Uralla), 30.63335°S 151.25°E, 1000 m, 23 Oct 1995, Schuh and Cassis, *Leptospermum brevipes* F. Muell. (Myrtaceae), det. P.G. Wilson 1996 NSW 395916. 1♂ (00272779) (AM).

PARATYPES: **AUSTRALIA: New South Wales:** 20 km E of Retreat (W. of Uralla), 30.63335°S 151.25°E, 1000 m, 23 Oct 1995, Schuh and Cassis, *Leptospermum brevipes* F. Muell. (Myrtaceae), det. P.G. Wilson 1996 NSW 395916, 1♀ (00393317) (AM), 1♂ (00272778), 1♀ (00272781) (AMNH), 2♀ (00393314, 00393318) (QM), 2♂ (00393312, 00393313), 2♀ (00393315, 00393316) (UNSW).

Ausejanus tasmaniae (Carvalho and Gross), new combination
Figure 7; plate 4

Sejanus tasmaniae Carvalho and Gross, 1982: 23, figs. 28–30, 105 (n. sp., descr., disc., DV, MG).
Sejanus brunneus Carvalho and Gross, 1982: 23, figs. 43–45, 111 (n. sp., descr., disc., DV, MG). NEW SYNONYMY.

DIAGNOSIS: Easily separated from other members of *Ausejanus* by combination of deep-red hemelytra and femora, partial transparent fascia restricted to claval suture (pl. 4), and dark burgundy to reddish head, thorax, and body.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.52–4.05, width pronotum 0.92–0.99, maximum width across hemelytra 1.01–1.36. COLORATION: Dark burgundy to red. Head dark, reddish brown. All antennal segments dark brown. All labial

segments dark brown. Eyes dark red. Thorax, pronotum, and scutellum dark reddish brown. Procoxae gold, meso- and metacoxae reddish brown. Femora dark red to red. Tibiae red basally, golden brown distally, metatibia with parallel rows of dark spicules. Tarsi dark brown. Anterior portion of corium near attachment to thorax dark reddish brown, diminishing in pigmentation to a ruby red basally toward cuneus and darkening in clavus along margins with scutellum and along claval commissure. Partial fascia consists of transparent areas along middle portion of length of claval suture, contrasting with dark red pigmentation inside clavus (pl. 4). Cuneus with white pigmented line along anterior margin of cuneus extending for approximately ¼ total length of cuneus, remaining posterior dark red. Membrane brown, with veins retaining small amount of red to orange pigmentation. Abdomen dark reddish brown. STRUCTURE: Eyes relatively small, width of eyes less than vertex width and not height of head in lateral view. Length of antennal segment 2 longer than 1.4 times head width. Remaining structure characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 3.16–3.29, width pronotum 0.95–1.02, width at widest part of wings 1.04–1.34. STRUCTURE: Vertex over half total head width. Length antennal segment 2 nearly 1.25 times total head width. COLORATION: Female generally brighter red than male, but overall similar in pattern (pl. 4). Antennal segment 1 dark brown, segment 2 dark brown basally gold, distal ⅓ of length transitioning to dark brown, segment 3 gold basally dark brown distally, segment 4 dark brown. Hemelytron as in male but with extensive transparent areas along claval suture. Cuneus whitish yellow along anterior margin with hemelytra more than half total cuneal length, remaining posterior portion dark red. GENITALIA: As in generic description.

HOSTS: *Leptospermum sp.* (Myrtaceae).

DISTRIBUTION: Tasmania.

DISCUSSION: *Sejanus brunneus* was originally described as identical to *A. albisignatus* in external morphology excluding the lengths of antennal segments 2 and 3, which were described as 10%–20% shorter in *S. brunneus* than A. *albisignatus* (Carvalho and Gross 1982). However, based on images of the type of *S. brunneus*, the species in fact is *A. tasmaniae*. It shares the characters of a transparent fascia along the claval suture on a dominantly red hemelytron, a deep red to burgundy head, thorax, pronotum, and scutellum and having all the femora dark red as in *A. tasmaniae*. Characters separating *A. tasmaniae* from A. *albisignatus* are the completely dark brown antennal segments, all femora dark red, and the relatively small eyes compared in *A. tasmaniae*. *Ausejanus tasmaniae* also appears to be host specific to one genus of Myrtaceae (*Leptospermum* spp.), unlike *A. albisignatus*, which has several dozen host plants from multiple families.

HOLOTYPE: **AUSTRALIA: Tasmania:** L. Dobson, on subalpine shrubs, 6.ii.1955, T.E. Woodward. 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: Tasmania:** Cradle Mountain–Lake Saint Clair National Park, Visitor Centre, Cradle Mountain, 41.59618°S 145.9308°E, 823 m, 25 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum rupestre* Hook.f. (Myrtaceae), det. NSW staff NSW658260, 17♂ (00108554, 00272597–00272611, 00272614), 2♀ (00108552, 00272615) *Leptospermum scoparium* J.R. Forst. & G. Forst. (Myrtaceae), det. NSW staff NSW658233, 8♀ (00272620–00272627) (AMNH). Cradle Mountain–Lake St Clair Nat Park, Ronny Creek carpark and Little Kate House vicinity, 41.63579°S 145.94963°E, 868 m, 26 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658262, 1♂ (00272612), 1♀ (00272628) *Leptospermum lanigerum* Maiden & Betche (Myrtaceae), det. NSW staff NSW658263, 1♀ (00108551) (AMNH). Mt. Pine, 28 Feb 1990, G. Cassis, *Leptospermum* sp. (Myrtaceae), 11♂ (00393710–00393720), 28♀ (00393721–00393748) (AM). Southwest National Park (Maydena access): Edgar Campground on Scotts Peak Rd, 43.03019°S 146.3497°E, 293 m, 19 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Leptospermum scoparium* J.R. Forst. & G. Forst. (Myrtaceae), det. NSW staff NSW658233, 6♂ (00108553, 00272613, 00272616–00272619) (AMNH).

Ausejanus tiramisu, new species
Figure 7; plate 4

DIAGNOSIS: Distinguished from other members of *Ausejanus* by dark brown coloration of legs and all antennal segments, patterning on hemelytra of a pale white patch on a dark brown background on posterior portion of corium (pl. 4), and relatively small eyes for genus.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.57–3.26, width pronotum 0.81–0.95, maximum width across hemelytra 0.89–1.09. COLORATION: Chocolate brown and white. Head dark to medium brown. Antennae dark brown. Labium dark brown. Eyes ruby red. Thorax, pronotum, and scutellum dark brown. Coxae dark brown basally, lightening to gold at joint with trochanter and femora. Pro- and mesofemora proximally dark brown, distally pale brown. Metafemora completely dark brown. Pro- and mesotibiae proximally gold, dark brown distally. Metatibia completely dark brown with parallel rows of dark spicules. Tarsomeres completely dark on all legs. Corium and clavus brown with white transverse fascia covering most of basal half of corium and middle third of clavus. Clavus dark brown next to margin of scutellum and distal ¼ corresponding to dark area of corium. Apical half of corium brown with lightening toward middle portion of last half of corium, approximately corresponding to apex of claval commissure (pl. 4). Cuneus white on basal half, dark brown for remaining posterior lobes. Membrane dark brown. Abdomen dark brown, with abdominal sclerites 3–7 weakly paler. STRUCTURE: Vertex width approximately same width as an eye, eye height nearly total height of head. Length of antennal segment 2 just less than 1.33 total head width. GENITALIA: See generic description.

Female: Macropterous. Total length 2.23–2.72, width pronotum 0.81–0.90, width at widest part of wings 0.81–0.90. STRUCTURE: Vertex over half total head width. Length of antennal segment 2 nearly 1.10 times total head width. COLORATION: Same as male with exception of cuneus and margin of metepimeron, which have larger lobes white.

ETYMOLOGY: Named for the unique coloration pattern of the hemelytra that mirrors the interior layers of tiramisu, the famous Italian dessert.

HOSTS: Recorded primarily from *Olearia axillaris* (DC.) Benth (Asteraceae), including nymphs, suggesting this is a breeding host plant. Also recorded on *Boronia alata* Sm. (Rutaceae).

DISTRIBUTION: Western Australia along the coast, most likely wherever host plant is located.

DISCUSSION: Most similar in coloration pattern to *A. vividus,* but unique in its patterning of the posterior portion of the hemelytra containing a white patch versus completely dark brown as in *A. vividus* (pl. 4), and *A. tiramisu is* structurally different in having eyes shorter in height and width relative to the total width of the head. *Ausejanus tiramisu* appears to be host specific to one genus and species of plant, *Olearia axillaries,* where it was collected in large numbers along with nymphs.

HOLOTYPE: **AUSTRALIA: Western Australia:** Conspicuous Beach, Walpole-Nornalup National Park, 10 km E of Nornalup, 35.03725°S 116.8443°E, 30 m, 17 Dec 1997, Schuh, Cassis, Brailovsky, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH 05095328. 1♂ (00108592) (WAMP).

PARATYPES: **AUSTRALIA: Western Australia:** 2.1 km S of Coorow-Greenhead Rd, on Cockleshell Gully Rd, 30.08751°S 115.12°E, 156 m, 06 Nov 2004, Cassis, Weirauch, Tatarnic, Symonds, *Allocasuarina humilis* (Otto & F.Dietr.) L.A.S.Johnson (Casuarinaceae), det. PERTH staff PERTH6987478, 1♂ (00392798) (AMNH). Blowholes Rd NW of North West Coastal Hiway, Beagle Hill Area, 24.49068°S 113.4626°E, 20 m, 27 Oct 2004, Cassis, Wall, Weirauch, Tatarnic, Symonds, 1♀ (00195642) (AMNH). Cape Leeuwin, Leeuwin Naturaliste National Park, 34.37277°S 115.135°E, 02 Dec 1998, G. Cassis, 2♀ (00196980, 00196981) (AM), 1♂ (00196978) (ANIC), 1♂ (00196979) (USNM). Cape Naturaliste National Park, 33.54034°S 115.0123°E, 50 m, 14 Dec 1997, Schuh, Cassis, Brailovsky, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH 05055334, 3♂ (00196965–00196967), 10♀ (00196968–00196977) (AM), 7♂ (00272054–

00272060), 5♀ (00271790–00271793, 00275379) (AMNH). Conspicuous Beach, Walpole-Nornalup National Park, 10 km E of Nornalup, 35.03725°S 116.8443°E, 30 m, 17 Dec 1997, Schuh, Cassis, Brailovsky, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH 05095328, 15♂ (00196907, 00196911–00196924), 28♀ (00196925–00196952) (AM), 1♂ (00272066), 25♂ (00108519, 00108537–00108538, 00271788, 00272064–00272065, 00272067–00272079, 00272081–00272086), 27♀ (00108518, 00108541–00108542, 00271794–00271817) (AMNH), 1♂ (00196906) (ANIC), 1♀ (00271818) (SAMA), 1♂ (00196909) (TAMU), 1♂ (00196908) (UNSW), 2♂ (00196904, 00196910) (USNM), 3♂ (00272061–00272063) (WAMP), 1♂ (00196905) (ZISP). Forest Grove Road, 0.9 km E of Caves Road, 34.07227°S 115.0462°E, 60 m, 15 Dec 1997, Schuh, Cassis, Brailovsky, *Pultenaea reticulata* (Sm.) Benth. (Papilionaceae), det. PERTH staff PERTH 05056349, 1♂ (00272080) (AMNH). Gnarabup Beach, 33.99527°S 114.99138°E, 03 Dec 1998, G. Cassis, *Boronia alata* Sm. (Rutaceae) PERTH 05227593, 1♀ (00196999) (AM), 1♂ (00197000) (QM). Greenough River Mouth, 28.86304°S 114.6343°E, 05 Nov 2004, Cassis, Weirauch, Tatarnic, Symonds, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH6988334, 14♂ (00197032–00197045), 19♀ (00197013–00197031) (AMNH). Sloping Rocks, Leeuwin Naturaliste NP, 34.09777°S 114.99305°E, 02 Dec 1998, G. Cassis, 3♀ (00275396, 00275403–00275404), 6♂ (00275385–00275387, 00275389, 00275393–00275394) (AM), 1♀ (00275398), 1♂ (00275384) (ANIC), 1♀ (00275399), 1♂ (00275388) (QM), 2♀ (00275397, 00275405), 1♂ (00275391) (SAMA), 1♀ (00275401) (TAMU), 1♀ (00275400), 1♂ (00275390) (UNSW), 2♂ (00275376, 00275377), 1♀ (00275378) (WAMP), 1♀ (00275402), 1♂ (00275392) (ZISP). Yalgorup National Park, 32.83472°S 115.6524°E, 80 m, 04 Dec 1999, R.T. Schuh and G. Cassis, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH 05671744, 9♂ (00196694–00196695, 00196697, 00196700, 00196705–00196709), 25♀ (00196735–00196752, 00196754–00196760) (AM), 3♀ (00196719, 00196725, 00196731) (ANIC), 3♀ (00196720, 00196726, 00196732) (QM), 1♂ (00196710), 1♀ (00196753) (SAMA), 3♀ (00196721, 00196727, 00196733) (TAMU), 3♀ (00196717, 00196723, 00196729) (UNSW), 3♀ (00196718, 00196724, 00196730) (USNM), 7♂ (00196696, 00196698–00196699, 00196701–00196704) (WAMP), 3♀ (00196722, 00196728, 00196734) (ZISP). Yalgorup National Park, 32.83583°S 115.65111°E, 27 Nov 1998, G. Cassis, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH 05227461, 24♂ (00196762–00196779, 00196898–00196903), 61♀ (00196799–00196805, 00196812–00196828, 00196830–00196860, 00196870–00196875) (AM), 9♀ (00196861–00196869) (AMNH), 1♀ (00196808) (ANIC), 1♀ (00196809) (QM), 1♀ (00196829) (SAMA), 1♂ (00196780), 1♀ (00196810) (TAMU), 1♀ (00196806) (UNSW), 1♂ (00196781), 1♀ (00196807) (USNM), 17♂ (00196782–00196798) (WAMP), 1♀ (00196811) (ZISP).

Ausejanus uestaustralianus (Carvalho and Gross), new combination
Figure 8; plate 4

Sejanus uestaustralianus Carvalho and Gross, 1982: 22, figs. 25–27, 104 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Recognized by red hemelytral coloration on posterior portion of hemelytron, yellowish anterior portion without a distinct transverse fascia, and completely yellow femora (including metafemur) and tibiae (pl. 4). *Ausejanus uestaustralianus* is similar in coloration to *A. uestaustralianus,* but latter taxon has red metafemur and less of anterior portion of hemelytron occupied by yellow or white in a transverse fascia.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 3.81, width pronotum 0.92, maximum width across hemelytra 1.24. COLORATION: Dark red and yellowish white. Head dark to medium brown. Antennal segment 1 golden, remaining antennal segments pale brown. Labium dark brown. Eyes ruby red. Thorax, pronotum and scutellum dark brown. Procoxae golden, meso- and metacoxae basally dark red, golden distally. Pro- and mesofemora golden, metafemora completely dark red. All tibiae gold, metatibiae with parallel rows of dark spicules. Tarsomeres pale brown. Anterior of clavus adjacent to scutellum deep red and apex of clavus pinkish, remainder yellowish white (pl. 4).

Anterior half and lateral margins of corium yellowish white, median and posterior area pinkish red. Cuneus white for basal ⅓, dark red for remaining posterior lobes. Membrane pale brown with red-pigmented veins. Abdomen dark brown, with abdominal sclerites 3–7 weakly paler. STRUCTURE: Vertex width less than width of one eye, eye height nearly total height of head. Length of antennal segment 2 just less than 1.33 total head width. GENITALIA: See generic description.

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: Southwestern Western Australia.

HOLOTYPE: **AUSTRALIA: Western Australia:** Stirling National Park, 22.ix.1965, E.Britton and Uther Backer. 1♂(ANIC).

SPECIMENS EXAMINED: **AUSTRALIA: Victoria:** Lake Albacutya near Rainbow, 06 Sep 1974, Z. Liepa, 1♂ (00393681) (AM). **Western Australia:** Stirling National Park, 22.ix.1965, E.Britton and Uther Backer. Paratypes 2♂(ANIC).

Ausejanus vividus (Carvalho and Gross), new combination
Figures 8, 10I; plate 4

Sejanus vividus Carvalho and Gross, 1982: 33, figs. 53–55, 113 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Differentiated from other species of *Ausejanus* by combination of relatively large body size, white-pigmented complete transverse fascia on anterior portion of hemelytra, and completely dark brown antennal segments, head, thorax, legs, and abdomen. Similar in coloration to *A. tiramisu*, however, posterior portion of hemelytra continuously dark brown in *A. vividus* and eyes larger than in *A. tiramisu*.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.31–4.46, width pronotum 0.89–1.08, maximum width across hemelytra 1.09–1.44. COLORATION: Dark brown and white. Head dark brown. All antennal segments dark brown, labium dark brown like head. Eyes dark red. Thorax, pronotum, and scutellum dark brown. Thoracic pleura dark brown, pale on dorsal half of posterior margin. Coxae dark brown basally, margins with trochanters white. Trochanters white. Profemora dark brown to maroon basally, becoming pale distally. Meso- and metafemora dark brown. Pro- and mesotibiae pale brown basally, darkening toward tarsomeres. Metatibiae predominantly dark brown with pale brown margin with femora, also with parallel rows of dark spicules. Anterior of clavus dark brown, corium with transparent to white pigmented transverse fascia anteriorly. Portion of white pigment transverses clavus, clavus transitioning back into dark brown for remaining posterior portion. Apical half of corium dark brown (pl. 4). Cuneus with white-pigmented band on basal third, remainder dark brown. Membrane brown. Abdomen dark red. STRUCTURE: Eyes in lateral view encompassing height of head, vertex approximately equal to width of eye. Remaining structural characteristics as in generic description. GENITALIA: As in generic description.

Female: Macropterous. Total length 2.20–3.56, width pronotum 0.90–1.06, width at widest part of wings 1.09–1.34. STRUCTURE: Vertex nearly half of total head width. Length of antennal segment 2 1.2 times total head width. COLORATION: Same as male with exception of cuneus, which has larger lobes pigmented white.

HOSTS: Mostly Fabaceae (*Acacia* sp.), but also recorded on Asteraceae, Myrtaceae, Araliaceae, and Malvaceae.

DISTRIBUTION: Tasmania to Queensland, one locality in Western Australia.

DISCUSSION: One of the most easily recognized and attractive species of *Ausejanus,* this species is widely distributed in Australia. There is slight variation in coloration for *A. vividus* where male specimens collected in southern latitudes of Australia (e.g., Tasmania) are darker in leg coloration and have less white pigmentation on their transverse fascia, but the associated females show no differences between populations and make identification to this species fairly easy. *Ausejanus vividus* males and females are similar in coloration to *A. schwartzi*, but males of *A. vividus* have a relatively wide transverse fascia compared to the thin strip of *A. schwartzi.* Further, females of *A. vividus* have a distinct division between the anterior margin of the transverse fascia and the dark anterior area of the corium and clavus, whereas in *A.*

schwartzi females the line is not as defined and the anterior margin is golden.

HOLOTYPE: **AUSTRALIA: Queensland:** Brisbane, 22.ix.1964, H.A. Rose. 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: Australian Capital Territory:** Black Mountain, 35.26387°S 149.10051°E, 19 Nov 1985, G. Cassis, *Acacia decurrens* Willd. (Fabaceae), 1♀ (00088825), 1♀ (00090919) (AM). **New South Wales:** 9 km N of Pambula, Green Pinch Dam, 36.91668°S 149.9°E, 250 m, 10 Nov 1995, Schuh and Cassis, *Cassinia longifolia* R. Br. (Asteraceae), det. J. Everett 1996 NSW 395999, 2♀ (00272712, 00272713) (AMNH). 17 km N of Bega, 36.58334°S 149.8333°E, 50 m, 10 Nov 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. (Fabaceae), det. B.J. Conn 1996 NSW 395993, 1♂ (00272752), 3♀(00272765–00272767) (AMNH). 20 km E of Retreat (W. of Uralla), 30.63335°S 151.25°E, 1000 m, 23 Oct 1995, Schuh and Cassis, *Leptospermum brevipes* F. Muell. (Myrtaceae), det. P.G. Wilson 1996 NSW 395916, 2♀ (00089929, 00090945) (AM). 43 km SE of Braidwood, Deua National Park, Deua River, 35.76339°S 149.92323°E, 100 m, 10 Nov 1995, Schuh and Cassis, 3♂ (00272745–00272747), 2♀ (00272768, 00272769) (AMNH). Araluen, 35.65001°S 149.8167°E, 50 m, 11 Nov 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. (Fabaceae), det. B.J. Conn 1996 NSW 395993, 9♀ (00090910–00090918) (AM), 2♂ (00272753, 00272754), 5♀ (00272755, 00272770–00272772) (AMNH). Bournda National Park, North Wallagoot, Turingal Head, 36.78452°S 149.9568°E, 16 m, 20 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Acacia mearnsii* De Wild. (Fabaceae), det. NSW staff NSW658198, 1♂ (00274151) (AM), *Acacia mearnsii* De Wild. (Fabaceae), det. NSW staff NSW658193, 8♀ (00272757–00272764) *Acacia mearnsii* De Wild. (Fabaceae), det. NSW staff NSW-658198, 4♂ (00272748–00272751), 1♀ (00272720) (AMNH). Clarence, 33.46666°S 150.23333°E, 23 Dec 1990, T. Gush, *Leptospermum grandiflorum* Sm. (Myrtaceae), 2♀ (00274146, 00274147) (AM). Monga State Forest, 35.58333°S 149.91666°E, 26 Sep 1979, G.S. Medvedev, 1♀ (00229471); 26 Nov 1979, Zaytsev, 6♂ (00229483–00229488), 14♀ (00229468–00229470, 00229472–00229482). Royal National Park, 15 Oct 1993, G. Cassis, *Acacia decurrens* (Fabaceae), 9♂ (00090948–00090956), 14♀ (00090928–00090941), 8♀ (00090920–00090927) (AM). Royal National Park, Warumbul Picnic Area, 34.06667°S 151.1048°E, 20 m, 14 Nov 2001, Cassis, Schuh, Schwartz, Silveira, 3♂ (00274229, 02724227–02724228), 4♀ (00274230–00274233) (AM), *Acacia irrorata* subsp. *irrorata* Sieber ex Spreng. (Fabaceae), det. NSW staff NSW666408, 3♂ (00128215–00128217), 5♀ (00128222, 00128218–00128221) (AMNH). Spring Hill, 33.39857°S 149.15225°E, 945 m, 03 Dec 2006, K. Menard and N. Tatarnic, *Acacia mearnsii* De Wild. (Fabaceae), 1♀ (00272774) (AMNH). St. Forest W of Ulladulla, above Carters Creek, 35.5152°S 150.0346°E, 200 m, 11 Nov 1995, Schuh and Cassis, *Astrotricha latifolia* Benth. (Araliaceae), det. B.M. Wiecek 1996 NSW 396004, 1♀ (00274149) (AM). **Queensland:** 8.2 km E of Mungallala, 26.46401°S 147.6248°E, 560 m, 31 Oct 1998, Schuh, Cassis, Silveira, *Cassinia* sp. (Asteraceae), det. Det: Royal Bot Gard. NSW, 1♀ (00195982) (AMNH). Brisbane, 27.46785°S 153.02801°E, 01 Aug 1964, J.T. Medler, 1♀ (00271743) (USNM). Bunya Mountains, 26.83333°S 151.55°E, 20 Dec 1937, N. Geary, paratype, 1♂ (00393292) (ANIC). Kondaii Circuit, Bunya Mts. N.P., 05 Dec 1985, G. Cassis, 1♀ (00088828) (AM). **Tasmania:** 4.1 km N of Huon Hwy & Pilliger Ave intersection, Mt. Wellington, The Springs, 42.91707°S 147.25546°E, 684 m, 15 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Oxybolium arborescens* R.Br. (Fabaceae), det. NSW staff NSW658211, 1♀ (00108517, 00272417) (AM), 1♀ (00108517) (AMNH). 7 km W of Southwest National Park (Maydena access): intersection of Frodsham's Pass and Gordon River Rd, 42.82103°S 146.31018°E, 306 m, 18 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia dealbata* Link (Fabaceae), det. NSW staff NSW658224, 7♂ (00108516, 00272335–00272340), 9♀ (00108548, 00272312–00272319) (AMNH). Alma Reserve on C132, 22 km S of junction with C145, 41.27618°S 146.23228°E, 40 m, 26 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia dealbata* subsp. *dealbata* Link (Fabaceae), det. Field ID, 2♂ (00272354, 00272355), 5♀ (00272291–00272295) (AMNH). Arve River Picnic Ground on C632, 43.15874°S 146.8068°E, 172 m, 21 Jan 2004, M.D. Schwartz

and P.P. Tinerella, *Acacia dealbata* subsp. *dealbata* Link (Fabaceae), det. Field ID, 3♂ (00272350–00272351, 00272356), 2♀ (00272288, 00272289) (AMNH). Avoca Picnic Area, just NW of A4, 41.78387°S 147.7182°E, 197 m, 27 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia dealbata* Link (Fabaceae), det. NSW staff NSW 658224, 5♀ (00272320–00272324), 2♂ (00272348, 00272349) (AMNH). Devonport, town greenbelt, 41.20759°S 146.3245°E, 195 m, 11 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Acacia baileyana x ? dealbata (probably)* (Fabaceae), det. NSW staff NSW658143, 1♂ (00274140) (AM). Geeveston, 7 km WNW of, 43.15°S 146.66666°E, 14 Feb 1992, T. Gush, 1♀ (00274139) (AM). Mt. Field National Park, Russell Falls Visitor Centre, 42.68151°S 146.7168°E, 167 m, 16 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia dealbata* subsp. *dealbata* Link (Fabaceae), det. NSW staff NSW658219, 4♂ (00272331–00272334), 9♀ (00272296–00272304) (AMNH). Sandspit River Forest Reserve, Wielangta Forest Drive, 42.6941°S 147.8608°E, 60 m, 14 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Acacia dealbata* Link (Fabaceae), det. Field ID, 1♀ (00272290) (AMNH). Strathgordon, Lake Pedder Chalet, 42.76859°S 146.0461°E, 337 m, 18 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Acacia dealbata* subsp. *dealbata* Link (Fabaceae), det. NSW staff NSW-658225, 7♂ (00272341–00272347), 8♀ (001-08547, 00272305–00272311) (AMNH). Tarraleah Power Station grounds, on A10, NW of Hamilton, 42.29848°S 146.4584°E, 366 m, 22 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Ozothamnus rosmarinifolius* (Labill.) DC. (Asteraceae), det. Field ID, 5♀ (00272325–00272329) *Acacia dealbata* subsp. *dealbata* Link (Fabaceae), det. Field ID, 2♂ (00272352, 00272353), 1♀ (00272330) (AMNH). **Victoria:** 5 km E of Cann River, Reedy Creek, 37.5681°S 149.2036°E, 70 m, 19 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Acacia mearnsii* De Wild. (Fabaceae), det. NSW staff NSW658193, 1♀ (00274312) (AM). Brodribb River, 64 km W of Cann River, 37.2°S 148.5833°E, 50 m, 08 Nov 1995, Schuh and Cassis, *Acacia mearnsii* De Wild. [introduced] (Fabaceae), det. B.J. Conn 1996 NSW 395993, 7♂ (00274298–00274304), 4♀ (00090946–00090947, 00274306–00274307) (AM), 10♂ (00273125–00273134), 4♀ (00273135–00273138) (AMNH). **Western Australia:** Mt. Augustus, 24.33333°S 116.83333°E, 03 Sep 1980, C.A.Howard & T.F.Houston, *Abutilon lepidum* (F.Muell.) A.S.Mitch. (Malvaceae), 3♀ (00202584–00202586) (WAMP).

Austrodapus, new genus
Figures 11–12, 44L–O; plate 4

TYPE SPECIES: *Austrodapus nitens*, new species.

DIAGNOSIS: Recognized by large size, castaneous to dark brown coloration; distinctly shiny head, pronotum, and scutellum, flat pronotal collar, swollen posterior lobe of pronotum convexly rounded and with narrow lateral margins in anterior lobe, eyes exserted from anterior margin of pronotum, long interocular setae, long erect golden setae on metatibiae, punctate hemelytron with both long erect simple setae and short golden sericeous setae but without reflective patches, transversely rounded hemelytral margins weakly constricted medially, tubercules on posteroventral margin of pygophore, and form of male genitalia.

DESCRIPTION: *Male*: Macropterous, large, medially constricted. Total length 3.07–3.27, width pronotum 1.06–1.11, maximum width across hemelytra 1.04–1.06. COLORATION: Castaneous to chocolate brown. **Head:** Brown, castaneous to golden. Eyes deep red to dark purple. Labium pale brown. Antennal segment 1 golden, segment 2 completely dark brown, segment 3 golden basally dark distally, segment 4 brown. **Thorax:** Pronotum, scutellum, and thorax dark brown to castaneous. Dorsolateral margin of metepisternum and scent gland unicolorous with thoracic pleura. *Legs:* Procoxae reddish brown, mesocoxae golden with brown margin adjacent to thorax basally, metacoxae completely golden. All femora castaneous to brown, all tibiae basally dark brown to castaneous, distally golden, with metatibiae with parallel rows of dark spicules and long, obvious golden setae. Basal tarsomeres golden, distally dark brown. *Hemelytra:* Primarily castaneous to dark brown with white partial fascia occupying median of posterior half of clavus and posterior to apex of scutellum (pl.

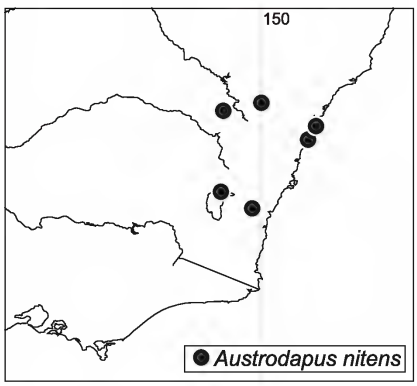

Figure 11. Distribution map of *Austrodapus nitens* (southeastern Australia).

4), lateral margins anterior to cuneus sometimes with reddish tinge. Anterior margin of cuneus white with yellowish tinge at lateral margins, occupying nearly ⅓ total area of cuneus, posterior dark brown or castaneous like corium. Membrane pale brown with darker brown patches along posterolateral margins, brown-colored veins. **Abdomen:** Brown to castaneous, darker in than rest of insect. SURFACE AND VESTITURE: Dorsal surface of body and eyes covered with long erect pale brown setae. Head, pronotum and scutellum distinctly shiny. Hemelytron punctate, also covered with long erect pale brown setae but also includes short golden sericeous setae covering majority of surface, lacking reflective patches. STRUCTURE: **Head:** Clypeus exserted, surpassing anterior margin of frons and visible in dorsal view. Vertex convex and declining along posterior margin, width nearly equal to two times width of one eye, visible in lateral view. Dorsal surface of eyes weakly removed from vertex, height greater than 1.5 total height of head, approximately ¼ of total height of head below eyes, posterior margin of eyes parallel to anterior margin of pronotum. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and equal to in diameter or wider than segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 equal to one nearly 1.33 times head width. Antennal segments 3 and 4 slender and less than half length of segment 2. Apex labial segment 1 subapical to posterior margin of head, apex of segment 4 reaching apex of mesocoxa. **Thorax:** Pronotum more than 1.5 times as wide as long. Flat, narrow pronotal collar. Mesoscutum exposed, scutellum weakly transversely rounded. Scent gland approximately ⅓ total area of metepimeron. *Legs:* Moderate length, slender with metafemora widening in diameter subapically with joint to metatibiae, kneelike shape. Claws moderate length and width, pulvilli small and less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins nearly parallel sided, dorsally transversely rounded. Cuneus triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, lateral and anterior margin of cuneus occupied by white thickened. **Abdomen:** Narrow, elongate, parallel sided, abdominal sternite 1 wider than long. GENITALIA (fig. 12): **Pygophore:** One-fourth total length of abdomen. **Endosoma:** Large, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane that forms fanlike extension near apex, margin terminating below base of secondary gonopore. Secondary gonopore small, weakly sclerotized or horse-collar shaped, located at apex (fig. 12A). **Phallotheca:** Large, C-shaped, apex gently tapering toward point (fig. 12C). **Right Paramere:** Moderately sized, smaller than left paramere, narrow at apex and widening subapically, with tapering, pointed apex (fig. 12D). **Left Paramere:** Moderately sized; posterior process slender, with spicules, and nearly straight for its length with dorsal margin folded over ventrally; posterior process relatively elongate compared to anterior process; anterior process stout but without spicules on interior margin, apex directed ventrally. Main area of body between anterior and posterior processes rounded (fig. 12B).

Female: Macropterous, medium sized, medially constricted. Total length 3.07–3.32, width pronotum 1.08–1.14, maximum width across hemelytra 1.14–1.19. COLORATION: Similar patterning as in male, with abdomen completely dark brown in contrast to castaneous thorax and head. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: Clypeus produced, strongly exserted in dorsal view. Vertex convex, width

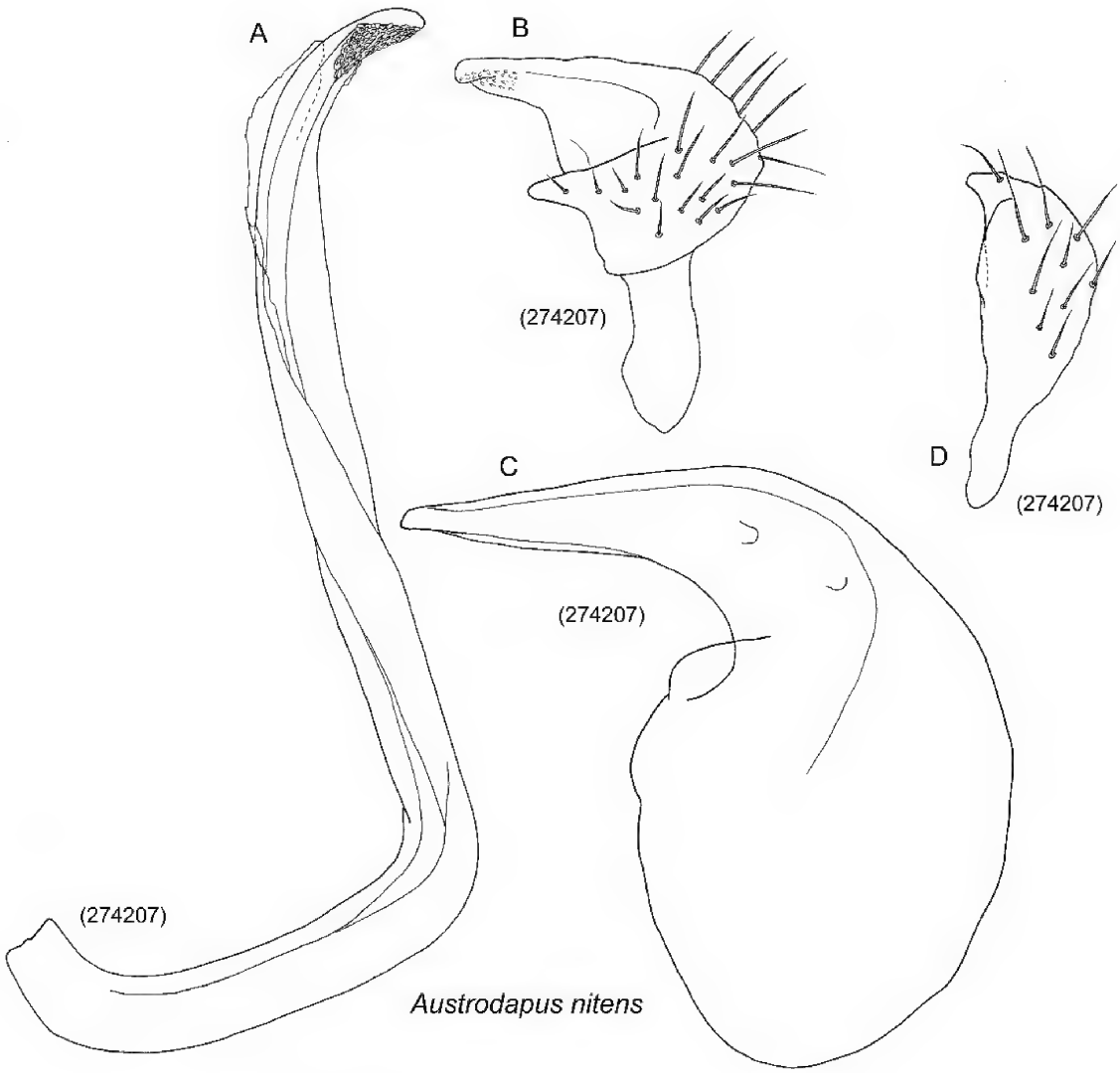

Figure 12. Male genitalia of *Austrodapus nitens* (A–D).

greater than two times width of one eye. Eyes greater than half total height of head in lateral view, dorsal surface of eyes continuous with dorsum of vertex. Abdomen parallel sided, anterior half posterior from thorax gently declining ventrally, posterior half of abdomen convex and curving apically to dorsal surface of abdomen. Spine present on ventral surface of ovipositor. GENITALIA (fig. 44L–O): Two separate, triangular-shaped vestibular sclerotized plates, lateral tube not apparent, but vulva covered by T-shaped apical sclerite (fig. 44N). Lateral margins of first gonapophyses sclerotized between dorsal and ventral labiate plates; sclerotized rings weakly sclerotized (fig. 44O). Posterior wall mostly membranous, with posterior margin sclerotized across margin with flat surface (fig. 44L), and lateral region of interramal sclerites sclerotized (fig. 44M).

ETYMOLOGY: A name proposed by J.C.M. Carvalho for two of the examined specimens but never published; masculine.

HOSTS: Fabaceae, primarily *Acacia* spp.

DISTRIBUTION: New South Wales.

DISCUSSION: The endosoma of *Austrodapus* looks very similar to the endosoma of *Abuyogocoris* (Schuh 1984: figs. 659, 662)

with a membrane that extends dorsally along the apical half of the endosoma and ending subapically, which may be homologous to a fanlike structure illustrated in Schuh (1984). We were not able to reexamine the male genitalia of *Abuyogocoris*. However, the differences in the structure of the left paramere, the presence of the sericeous setae on the hemelytron, and the overall larger size indicate *Abuyogocoris* and *Austrodapus* are different genera.

Austrodapus nitens, new species
Figures 11–12, 44L–O; plate 4

DIAGNOSIS: Recognized by the generic diagnosis.

DESCRIPTION: See generic description.

ETYMOLOGY: From the Latin *nitens,* "shiny."

HOSTS: *Acacia* spp. (Fabaceae).

DISTRIBUTION: New South Wales.

DISCUSSION: Within *Austrodapus* there is variability in the size and overall coloration; some specimens are more castaneous whereas others are more dark brown, and those collected more to the northern part of the range tend to be larger than specimens from the southern part. However there are no differences in the genitalia, coloration of the cuneus, the partial transverse fascia, appendages, or antennae to indicate that color differences warrant separation into separate species.

HOLOTYPE: **AUSTRALIA: New South Wales:** Spring Hill, 33.39857°S 149.15225°E, 945 m, 03 Dec 2006, K. Menard and N. Tatarnic, *Acacia mearnsii* (Fabaceae), 1♂ (00392789) (AM).

PARATYPES: **AUSTRALIA: Australian Capital Territory:** Black Mountain, 35.26387°S 149.10051°E, 21 Jan 1972, R.L. Kitching, *Acacia baileyana* F. Muell. (Fabaceae), 2♀ (00393692, 00393693) (AM). Canberra Black Mountain, 35.26666°S 149.1°E, 1990, A. Kirejtschuk, 1♂ (00229527) (ZISP). **New South Wales:** 6 mi ESE of Nelson Bay, 29 Nov 1967, Britton and Misko, 1♂ (00168829) (ANIC). Dee Why Beach, off Dee Why Parade Road, 33.75°S 151.28333°E, 22 Nov 2006–23 Nov 2006, K. Menard and N. Tatarnic, *Acacia irrorata subsp. irrorata* Sieber ex Spreng. (Fabaceae), det. NSW staff NSW666408, 1♀ (00128214) (AMNH).

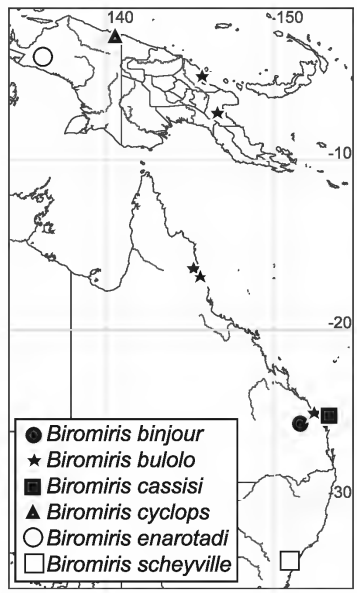

Figure 13. Distribution map of *Biromiris* spp.

Dharug National Park, 2 km S of Wisemans Ferry, 33.22°S 150.03°E, 28 Nov 2006, K. Menard and N. Tatarnic, *Acacia mearnsii* (Fabaceae), 3♀ (00195989, 00392794–00392795) (AMNH), 1♂ (00392791) (TAMU), 1♀ (00392793) (USNM). Royal National Park, Warumbul Picnic Area, 34.06667°S 151.1048°E, 20 m, 14 Nov 2001, Cassis, Schuh, Schwartz, Silveira, *Acacia irrorata subsp. irrorata* Sieber ex Spreng. (Fabaceae), det. NSW staff NSW666408, 2♂ (00274220, 00274223) (AM), 2♂ (00274222, 00274224) (ANIC), 2♂ (00274217, 00274225) (QM), 2♂ (00274219, 00274226) (UNSW), 1♂ (00274221) (USNM). Spring Hill, 33.39857°S 149.15225°E, 945 m, 03 Dec 2006, K. Menard and N. Tatarnic, *Acacia mearnsii* (Fabaceae), 1♂ (00392790) (TAMU), 1♂ (00392788) (USNM).

Biromiris Schuh
Figure 13; plates 4, 5, 8

Biromiris Schuh, 1984: 206 (n. gen., diag., descr.).

TYPE SPECIES: *Biromiris enarotadi* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by carina on lateral margins of pronotum, double chin–like gula, terete antennal segments 3 and 4, white dorsolateral process of metepisternum

dorsal to scent gland, long ommatidial setae, partial transverse fascia composed of transparent patches on anterior of corium, combination of long erect setae and short silvery setae, and flat hemelytron.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, weakly medially constricted. Total length 3.12–3.56, width pronotum 1.01–1.06, maximum width across hemelytra 0.99–1.04. COLORATION: Orange, dark brown or castaneous. **Head:** Dark brown, castaneous or orange. Eyes silver or dark purple. Labium golden to brown. Antennal segment 1 golden, segment 2 golden basally and pale brown distally, segments 3 and 4 completely brown. **Thorax:** Pronotum, scutellum and thorax dark brown, castaneous, or orange. Dorsolateral margin of metepisternum with small white-colored protuberance, scent gland paler than thorax or similar. *Legs:* Coxae variable, either all brown or with brown basally and pale distally for pro- and metacoxae. Pro- and mesofemora pale brown to golden, metafemur usually darker. All tibiae dark brown basally, golden distally, metatibia with parallel rows of dark spicules. Basal tarsomeres golden, distally dark brown to completely golden or completely brown. *Hemelytra:* Anterior margin of corium castaneous to golden with an incomplete transparent fascia that occupies most of anterior portion of corium, posterior margin of transparent areas with dark brown margin that may or may not extend across median of clavus. Remainder of hemelytron castaneous, orange to pale brown, lateral posterior margins of hemelytra completely opaque, reddish brown to brown. Between ⅓ and ¼ of total area of cuneus white posterior to claval fracture, with lateral margins sometimes possessing yellowish tinge, posterior of cuneus darker than majority of corium. Membrane pale to dark brown with or without dark brown pigmentation around veins. **Abdomen:** Castaneous to dark brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with long, erect pale brown to black setae, hemelytron also possessing scattered, short and silverish to golden setae and sometimes patches of erect black setae. Medial portion of hemelytron and median of claval suture with reflective patches. Ommatidia setae long and obvious. STRUCTURE: **Head:** Clypeus weakly projecting beyond anterior margin of frons in lateral view, barely visible in dorsal view. Vertex weakly concave to convex, with posterior margin raised for medial half and lateral margins declining, forming shelflike appearance, width nearly width of one eye to nearly two times width of an eye. Cyberial muscle attachment sites visible on frons. Eyes weakly removed from anterior margin of vertex, vertex partially visible in lateral view by anterior surface of eyes, eyes greater than half of total height of head, and posterior margin of eyes obscure anterior margin of pronotum. One-third to ¼ of total height of head below eyes, gula short and with an additional ridge forming a double-chin appearance. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and wider in diameter than segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 nearly equal to head width to nearly 1.33 times head width, weakly curving medially. Antennal segments 3 and 4 nearly equal in diameter as antennal segment 2, tubular to terete, less than half length of segment 2. Labrum thin. Labial segment 1 extending past posterior margin of head, apex of segment 4 reaching apex of meso- or metacoxa. **Thorax:** Pronotum less than two times as wide as long, dorsal surface swollen dorsally and convex, without dorsal indentation separating anterior and posterior lobes, dorsal lateral margins narrowed anteriorly and widening distally forming bell-shaped pronotum in dorsal view or straight and forming trapezoidal shape in dorsal view. Lateral sides of pronotum with narrow to broad shelflike carina along medial line for first third of length of pronotum entire length (pl. 4, *Biromiris binjour, B. cassisi*), anterior lobes weakly to easily visible dorsally. Thin, partially reflexed collar present. Mesoscutum obscured by posterior margin of pronotum, scutellum weakly protruding medially. Scent gland less than ¼ total area of metepimeron. *Legs:* Elongate, narrow, metafemur widest preapically, kneelike. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Elongate, lateral margins constricted medially, dorsally flat, with lateral margins

of corium anterior cuneus expanded to form lobe over fracture. Cuneus triangular, length approximately less than or greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, and with partial thickening on lateral margins of cuneus in area occupied by white margin. **Abdomen:** Narrow for most of length, expanding in diameter to pygophore. Pygophore less than one-fifth to ⅓ total length of abdomen. GENITALIA: **Endosoma:** Relatively large, slender at base and wider at apex, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small, weakly sclerotized, located at apex of endosoma. **Phallotheca:** C-shaped, relatively short at base, apex tapering to narrow point (Schuh 1984: fig. 760). **Right Paramere:** Not examined. **Left Paramere**: Moderately sized; posterior process relatively wide, wider than base of paramere, with spicules, directed ventrally with concave curvature along dorsal margin, relatively elongate compared to anterior process; anterior process stout but without spicules on interior margin, dorsal surface subequal to midline of total height of paramere; dorsal surface of median portion between anterior and posterior processes convex (Schuh 1984: fig. 759).

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: Eastern coast of Australia, New Guinea.

DISCUSSION: This genus was previously only known from Papua New Guinea; however, at least three new species have been identified in Australia based on synapomorphies of the pronotal carina, and the white process on the dorsolateral surface of the metepisternum. The presence of terete antennal segments 3 and 4, and the double chin–like gula are synapomorphies of the Papua New Guinea species that are also present in the Australian species *B. scheyville*.

Biromiris binjour, new species
Figure 13; plates 4, 8

DIAGNOSIS: Recognized by characters in generic description, small size, dark-maroon to brown coloration (pl. 4), lack of terete antennal segments 3 and 4, wide vertex, and broad pronotal carina almost shelflike on lateral margins.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, weakly medially constricted. Total length 3.12, width pronotum 1.01, maximum width across hemelytra 0.99. COLORATION: Head brown. Eyes silverish. Labium brown with medial area paler. Antennal segment 1 golden, segment 2 golden basally for first third, orange-brown medially for middle third, brown distally for last third, antennal segment 3 mostly yellow-orange basally for approximately ¾ of total length and brown distally, antennal segment 4 completely brown. Pronotum, scutellum, and thorax castaneous with posterior margin of pronotum dark brown. Scent gland same as thorax. Procoxae dark reddish with white margin basal to joint with profemora, mesocoxae brown basally, transparent white for remainder of length, metacoxae dark basally and pale distally at margin with metafemora. Pro- and mesofemora brown, metafemora deeper brown red. Anterior margin of corium dark brown along with anterior half of clavus transitioning into transparent partial fascia with dark brown margin that takes up ⅓ of total area of anterior portion of corium (pl. 4). Remainder of hemelytron dark brown, lateral posterior margins of hemelytra completely opaque, reddish brown. Over ⅓ of total area of cuneus white posterior to claval fracture, occupying less than ⅓ total area of cuneus, posterior darker reddish brown than corium. Abdomen brown. STRUCTURE: Clypeus projecting beyond anterior margin of frons in lateral view, barely visible in dorsal view. Vertex flat, with posterior margin raised for medial half and lateral margins declining forming shelflike appearance, width nearly two times width of one eye. Approximately ⅓ of total height of head below eyes. Length of antennal segment 2 greater than 1.33 times total head width to two times head width, weakly curving medially. Antennal segments 3 and 4 slender. Labial segment 1 apex past posterior margin of head, apex of segment 4 reaching apex of metacoxa. Pronotum less than two times as wide as long, dorsal surface swollen dorsally and convex, without dorsal indentation separating anterior and posterior

lobes, dorsal lateral margins nearly straight, forming almost trapezoidal-shaped pronotum in dorsal view, lateral sides with broad shelflike carina along medial line with anterior lobes visible dorsally as lateral extensions. Cuneal length approximately less than ⅓ total length of hemelytral membrane. GENITALIA: Not examined.

Female: Unknown.

ETYMOLOGY: Named for the collecting locality of Binjour Plateau; a noun in apposition.

HOSTS: Unknown: vine scrub, pitfall trap.

DISTRIBUTION: Southeast Queensland.

DISCUSSION: This species has the pronotal carina as a broad ridge, unlike the narrow ridge found in most species of *Biromiris*. It is known only by the holotype.

HOLOTYPE: **AUSTRALIA: Queensland:** Binjour Plateau, Swains Rd, 25.53333°S 151.5°E, 340 m, 23 Sep 1997–21 Dec 1997, Cook and Monteith. 1♂ (00291236) (QM).

Biromiris bulolo Schuh
Figure 13

Biromiris bulolo Schuh, 1984: 208, figs. 686–687 (n. gen., diag., descr.).

DIAGNOSIS: Recognized by characters of generic diagnosis, concave posterior margin of vertex, relatively small size, nearly straight lateral margins of pronotum that form a trapezoid shape in dorsal view, terete antennal segments 3 and 4, and patches of erect, black setae.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea; unassociated females found in Northern Australia.

DISCUSSION: We were able to examine recently collected specimens of this species from Papua New Guinea in which the patches of dark setae are unique among all the currently known species of *Biromiris*. Four female specimens of this species were identified from northern Australia but are not described until corresponding male specimens are found to confirm that they are conspecific.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Bulolo, 282 m, August 13, 1956, E.J. Ford, Jr. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** 3 km NE by N Julatten, 16.35°S 145.22°E, 26 Sep 1980, J.C. Cardale, 1♀ (00168811) (ANIC). Bundaberg, 24.8694°S 152.35375°E, 10 m, 09 Dec 1904, Koebele, 2♀ (00318903, 00318904) (BPBM). Kuranda, 16.81888°S 145.63638°E, 355 m, 06 Jul 1919, F.X. Williams, 1♀ (00318905) (BPBM). **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 12 May 1993, O. Missa, 1♂ (00302072), 1♀ (00302075) (ISNB); 17 Apr 1996, O. Missa, 1♂ (00302069), 1♀ (00302073) (ISNB); 07 Jun 1996, O. Missa, 1♂ (00302071), 1♀ (00302074) (ISNB); 27 Jun 1996, O. Missa, 1♀ (00302076) (ISNB); 25 Jul 1996, O. Missa, 1♂ (00302070) (ISNB).

Biromiris cassisi, new species
Figure 13; plates 4, 8

DIAGNOSIS: Similar in hemelytral coloration and patterning to *B. binjour* but recognized by castaneous coloration of head, thorax, and legs (pl. 8), relatively narrow pronotal carina, and larger size.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, weakly medially constricted. Total length 3.22, width pronotum 1.03, maximum width across hemelytra 1.04. COLORATION: Head castaneous. Eyes dark brown. Labium paler brown. Antennal segment 1 golden, segment 2 golden basally and brown distally, segment 3 pale basally for approximately one-eighth of total length and brown distally, segment 3 completely brown. Pronotum, scutellum and thorax dark brown. Scent gland unicolorous with thoracic pleuron. Procoxae dark reddish with white margin basal to joint with profemora, mesocoxae brown basally, transparent white for remainder of length, metacoxae dark basally and pale distally at margin with metafemora. Pro- and mesofemora brown, metafemora missing in specimen. Pro- and mesotibiae dark brown basally, pale brown distally. Tarsomeres dark brown. Anterior margin of corium castaneous brown, anterior half of clavus transitioning into transparent partial fascia with dark brown margin that takes up ⅓ of total area of anterior portion of corium, dark margin extending across median of clavus. Remainder of hemelytron castaneous, lateral posterior margins of hemelytra completely opaque, reddish brown, and margin of corium and anterior of membrane darker

brown (pl. 4). Over ⅓ of total area of cuneus white posterior to claval fracture, with lateral margins possessing reddish tinge, occupying less than ⅓ total area of cuneus, posterior darker reddish brown than corium. Abdomen castaneous. STRUCTURE: Clypeus projecting beyond anterior margin of frons in lateral view, barely visible in dorsal view. Vertex flat, width nearly 1.5 times width of one eye. Approximately ⅓ of total height of head below eyes. Length of antennal segment 2 greater than 1.33 times total head width, weakly curving medially. Antennal segments 3 and 4 slender. Labial segment 1 apex past posterior margin of head, apex of segment 4 reaching apex of metacoxa. Dorsal lateral margins of pronotum nearly straight, forming almost trapezoidal-shaped pronotum in dorsal view, lateral sides with narrow shelflike carina along medial line with anterior lobes visible dorsally as lateral extensions. Scent gland less than ¼ total area of metepimeron. Cuneus triangular, length approximately less than ⅓ total length of hemelytral membrane. Pygophore less than one-fifth total length of abdomen. GENITALIA: Not examined.

Female: Unknown.

ETYMOLOGY: Named for the collector Gerasimos Cassis, whose research and fieldwork in Australia have provided the basis for description of new species from the region.

HOSTS: Unknown.

DISTRIBUTION: New South Wales.

DISCUSSION: This species is only known from the holotype; we did not dissect the genitalia.

HOLOTYPE: **AUSTRALIA: New South Wales:** Cooloola N.P., 8 km along road to Pooma Lake, Dec 1986, G. Cassis. 1♂ (00088850) (AM).

Biromiris cyclops Schuh
Figure 13

Biromiris cyclops Schuh, 1984: 209, figs. 686, 688 (n. gen., diag., descr.).

DIAGNOSIS: Recognized by characters of generic diagnosis, flat posterior margin of vertex, small size, vertex relatively narrow and nearly equal to width of one eye, narrowing of anterolateral margins of pronotum relative to posterior lateral margins forming bell shape in dorsal view, and lack of patches of black setae on hemelytron.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

Discussion: This species is similar to *B. bulolo* in external morphology and size, although it is relatively small compared to the rest of the Indo-Pacific and Australian fauna. The lateral pronotal carina is also partially visible in dorsal view in *B. cyclops*, which is not the case for the other two Indo-Pacific species and the Australian *Biromiris* species.

HOLOTYPE: INDONESIA: West Irian: Cyclops Mountains, Ifar, 300 m, June 22 1959. T.C. Maa. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Irian Jaya:** Cyclops Mountains, Ifar, 2.6°S 140.61°E, 300 m, 21 Jun 1959, T.C. Maa, paratype, 1♀ (00321086) (BPBM). Ifar, W. Sentani, Cyclops Mountains, 200 m, 19 Jun 1959–21 Jun 1959, T.C. Maa, 1♀ (00318944) (BPBM).

Biromiris enarotadi Schuh
Figure 13; plate 5

Biromiris enarotadi Schuh, 1984: 209, figs. 686, 689–698 (n. sp., diag., descr., DV, figs. head-pronotum, MG, SEM).

DIAGNOSIS: Recognized by relatively wide vertex, orange-castaneous coloration (pl. 5), large size, and relatively weakly swollen pronotum.

REDESCRIPTION: *Male*: Macropterous, medium to large sized, elongate, medially constricted. Total length 3.56, width pronotum 1.03, maximum width across hemelytra 0.99. COLORATION: Head pale orange brown. Eyes dark purple. Labium completely orange. Antennal segments missing in specimen examined, however in original description cited as Antennal segment 1 completely golden to golden basally, dark distally, segment 2 brown, segments 3 and 4 completely brown. Pronotum, scutellum, and thorax orange-brown. Scent gland unicolorous with thoracic pleuron. Procoxae golden orange, mesocoxae golden, metacoxae dark red. Pro- and mesofemora golden, metafemora mostly dark red excluding apex with tibiae where golden. All tarsomeres golden. Hemelytra orange-castaneous, with partial transparent transverse fascia on anterior

margin of hemelytron possessing dark posterior margin, occupying wide band across median of anterior margin of corium. Posterior lateral margins of corium weakly transparent posterior to median of hemelytron, transitioning into reddish-castaneous color anterior to cuneal fracture (pl. 5). Over ⅓ of total area of cuneus posterior to cuneal fracture white, posterior dark reddish brown to brown. Membrane pale brown with weak dark brown pigmentation on veins. Abdomen brown. STRUCTURE: Clypeus flush with frons in lateral view, barely visible in dorsal view. Vertex flat, width greater than width of one eye. Cyberial muscle attachment sites visible on frons. Eyes weakly removed from anterior margin of vertex, vertex partially visible in lateral view by anterior surface of eyes, eyes greater than half of total height of head, and posterior margin of eyes obscure anterior margin of pronotum. Approximately ¼ of total height of head below eyes. Length of antennal segment 2 greater than 1.5 times total head width to two times head width. Antennal segments 3 and 4 terete. Apex labium reaching mesocoxa. Pronotum less than two times as wide as long, dorsal surface weakly swollen dorsally and convex, without dorsal indentation separating anterior and posterior lobes, lateral margins nearly straight, forming almost trapezoidal-shaped pronotum in dorsal view, lateral sides with thin, carinalike ridge along medial line (Schuh 1984: fig. 691). Scent gland less than ¼ total area of metepimeron. Cuneus length approximately less than ⅓ total length of hemelytral membrane. GENITALIA: **Pygophore:** Large, with ventral surface nearly flat and anterior surface declining, ⅓ total length of abdomen. **Endosoma:** Large, slender at base and wider at apex, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small, weakly sclerotized, located at apex of endosoma. **Phallotheca:** C-shaped, relatively short at base, apex tapering to narrow point (Schuh 1984: fig. 760). **Right Paramere:** Not examined. **Left Paramere**: Moderately sized; posterior process relatively wide, wider than base of paramere, with sensory pits, directed ventrally with concave curvature along dorsal margin, relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, dorsal surface subequal to midline of total height of paramere; dorsal surface of median portion between anterior and posterior processes convex (Schuh 1984: fig. 759).

Female: Unknown.

HOSTS: Unknown; collected at light trap.

DISTRIBUTION: New Guinea; Queensland, Australia.

DISCUSSION: The specimen examined from Queensland is nearly identical to the paratypes from Papua New Guinea except is larger in size and paler in coloration, the latter likely due to fading. Therefore, we consider it conspecific, and include a redescription of the species as part of the emphasis on Australian Leucophoropterini.

HOLOTYPE: **INDONESIA: West Irian:** Wisselmeren, Duroto E of Enarotadi, 1800 m, August 21, 1955, J.L. Gressit. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** Forest Station, Bulburin State Forest via Many Peaks, 2000 m, 02 Apr 1972–05 Apr 1972, S.R. Monteith, 1♂ (00169265) (SAMA). **INDONESIA: Papua: *Paniai Division:*** Wisselmeren: Enarotadi, 3.91669°S 136.35017°E, 2000 m, 02 Aug 1955, J.L. Gressitt, paratype, 1♂ (00321087) (BPBM); 21 Aug 1955, J.L. Gressitt, paratype, 1♂ (00321088) (BPBM).

Biromiris scheyville, new species
Figure 13; plate 5

DIAGNOSIS: Recognized by relatively strong medial constriction of lateral hemelytral margins, only Australian *Biromiris* sp. with terete-shaped antennal segments 3 and 4, short segment 2, yellowish coloration of posterior apices of clavus (pl. 5), completely dark brown coxae, and large size.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, weakly medially constricted. Total length 3.56, width pronotum 1.06, maximum width across hemelytra 0.99. COLORATION: Head dark brown. Eyes silver. Antennal segment 1 golden, segment 2 golden basally and pale brown distally, segments 3 and 4 completely brown. Pronotum, scutellum and thorax dark brown. Scent gland paler than thorax. *Legs:* All coxae dark brown with

white margin basal to joint with femora. Pro- and mesofemora pale brown, metafemora darker brown. All tibiae dark brown basally, golden distally, metatibiae also with parallel rows of dark spicules. Basal segments of tarsomeres golden, distally dark brown. Anterior margin of corium castaneous brown along with anterior half of clavus, transitioning into transparent partial fascia with dark brown margin that takes up ⅓ of total area of anterior portion of corium, dark margin extending across median of clavus (pl. 5). Remainder of hemelytron castaneous, lateral posterior margins of hemelytra completely opaque, reddish brown, and margin of corium and anterior of membrane darker brown, posterior apices of clavus yellowish. Over ¼ of total area of cuneus white posterior to claval fracture, with lateral margins possessing yellowish tinge, occupying less than ¼ total area of cuneus, posterior darker reddish brown than corium. Membrane dark brown with dark brown pigmentation around veins. Abdomen dark brown. STRUCTURE: Clypeus projecting beyond anterior margin of frons in lateral view, barely visible in dorsal view. Vertex weakly concave, width nearly 1.5 times width of one eye. Approximately ⅓ of total height of head below eyes. Antennal segments 3 and 4 terete shaped. Labial segment 1 apex past posterior margin of head, apex of segment 4 reaching apex of metacoxa. Pronotum less than two times as wide as long, dorsal surface swollen dorsally and convex, without dorsal indentation separating anterior and posterior lobes, dorsal lateral margins narrowed anteriorly and widening distally forming bell-shaped pronotum in dorsal view, lateral sides with narrow shelflike carina along medial line extending only on ⅓ length of pronotum and calli weakly visible. Scent gland less than ¼ total area of metepimeron. Cuneus length approximately greater than ⅓ total length of hemelytral membrane. Abdomen narrow for most of length, expanding in diameter to pygophore. GENITALIA: **Pygophore**: Less than one-fifth total length of abdomen. Remaining structures not examined.

Female: Unknown.

ETYMOLOGY: Named for the collecting locality of Scheyville; noun in apposition.

HOSTS: Myrtaceae; from pyrethrum fogging of *Eucalyptus.*

DISTRIBUTION: Eastern New South Wales.

DISCUSSION: This species is only known from the male holotype and one other specimen from the same collecting event that is missing its head, pronotum, all appendages, and abdomen and therefore is not designated as a paratype.

Holotype: **AUSTRALIA: New South Wales:** Scheyville, 33.607°S 150.885°E, Oct 1987, H.F. Recher, *Eucalyptus crebra* F. Muell. (Myrtaceae). 1♂ (00291399) (QDPI).

Other Specimens Examined: **AUSTRALIA: New South Wales:** Scheyville, 33.607°S 150.885°E, Oct 1987, H.F. Recher, *Eucalyptus moluccana* (Myrtaceae), 1♂ (00393674) (AM).

Blesingia Carvalho and Gross
Figures 14–16, 44P–Q; plates 5, 8

Blesingia Carvalho and Gross, 1982: 42 (n. gen., descr., disc. key to spp.).

Pseudoleucophoroptera Schuh 1984: 235 (n. gen., diag., descr., disc.). NEW SYNONYMY.

TYPE SPECIES: *Blesingia gularis* Carvalho and Gross, 1982, by original designation.

DIAGNOSIS: Recognized by relatively elongate face, with equal to or greater than ⅓ of total height of head below eyes, medially constricted lateral margins of hemelytron, trapezoidal pronotum lacking flattened pronotal collar, relatively elongate antennal segment 2, narrow and elongate metafemur, presence of row of fringelike setae on metafemur, and posterior margin of eyes obscuring anterior margin of pronotum.

REDESCRIPTION: *Male*: Macropterous, medium to large sized, elongate, medially constricted. Total length 2.96–4.06, width pronotum 0.94–1.12, maximum width across hemelytra 0.99–1.22. COLORATION: Brown, pale brown, and castaneous. **Head:** Brown. Eyes silver, dark brown, or purple. Labium completely brown or with medial sections paler. Antennal segment 1 completely golden to golden basally, dark distally, segment 2 brown, segment 3 completely brown or pale basally and brown distally, segment 4 completely brown. **Thorax:** Pronotum, scutellum and thorax dark brown. Dorsolateral margin of metepisternum and

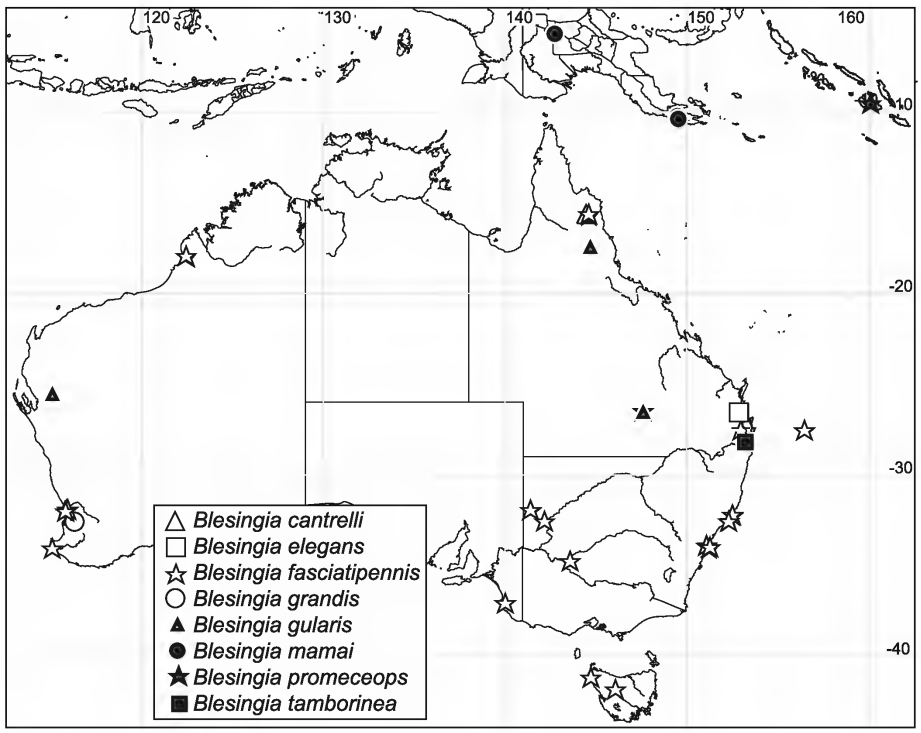

Figure 14. Distribution map of *Blesingia* spp.

scent gland with relatively narrow white band, width equal to about one-eighth of total width of scent gland to ¼ width, scent gland either continuous with thorax or paler. *Legs:* Procoxae entirely or partially white, mesocoxae reddish brown to brown, metacoxae dark basally pale distally for over half of length to completely dark brown. Profemora golden to dark brown, mid femora pale to dark brown, metafemur brown. Pro- and mesotibiae basally dark brown, distally golden, with metatibiae pale apically at joint with metafemora, dark brown for remainder of length or brown basally and golden distally, and with parallel rows of dark spicules. Basal tarsomeres golden and distally dark brown to all segments dark brown. *Hemelytra:* Brown with transparent transverse fascia on anterior margin of hemelytron occupying narrow band across most of anterior margin of corium to most of anterior surface, narrowing to band across clavus, dark brown posterior margin to fascia that transverses across entirety of hemelytron (pl. 5). Posterolateral margins of corium dark brown to reddish-castaneous color. Anterior margin of cuneus and sometimes posterior margin of corium anterior to cuneal fracture white with yellowish tinge at lateral margins, occupying less than one-fifth total area of cuneus to nearly ⅓, posterior dark reddish brown to brown. **Abdomen:** Brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with long, pale brown simple setae and short, silverish setae concentrated anterior and posterior to transverse fascia of hemelytron. Medial portion of hemelytron and median of claval suture with reflective patches. Posteroventral surface of metafemora with row of setae forming distinctive fringe appearance. STRUCTURE: **Head:** Clypeus partially visible or obscured by frons in dorsal and lateral view. Area of head below eyes in anterior view relatively narrow and constricted laterally with width just wider than width of vertex to narrower than width of vertex. Vertex weakly concave to flat, with posterior raised for medial half and lateral margins declining forming shelflike appearance or completely flat, width equal to or less than width of eye. Eyes contiguous with anterior

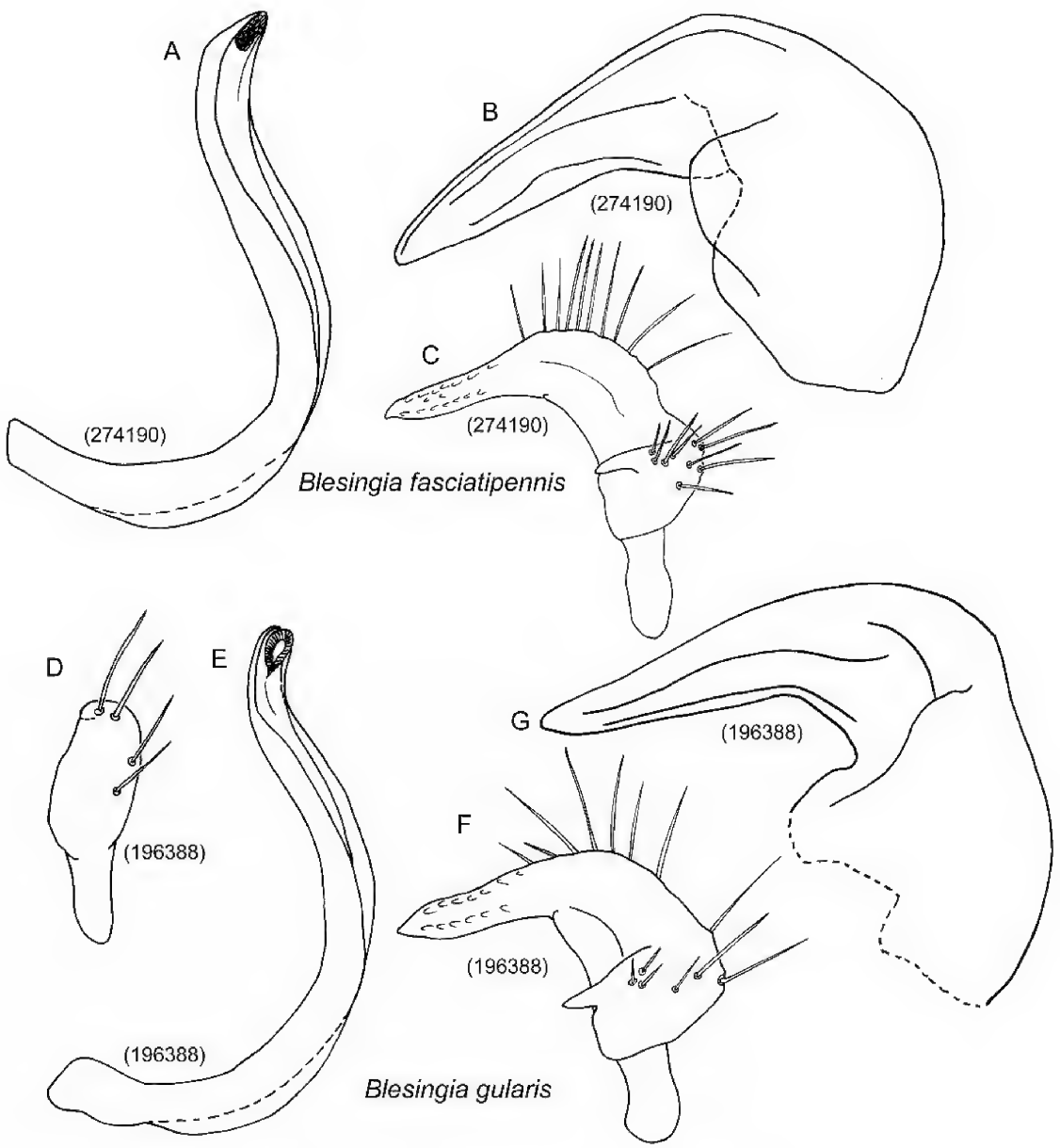

Figure 15. Male genitalia of *Blesingia* spp. (A–G).

margin of vertex to weakly removed. Eye height greater than 1.5 total height of head, vertex partially visible to obscured in lateral view by anterior surface of eyes, and posterior margin of eyes obscures anterior margin of pronotum. At least ⅓ total height of head below eyes to up to half of total height, gula short to elongate, flat. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and wider in diameter than segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 greater than 1.5 times total head width to two times head width, weakly curving medially. Antennal segments 3 and 4 slender and less than half to ⅓ of total length of segment 2. Labrum thin to swollen, laterally compressed and

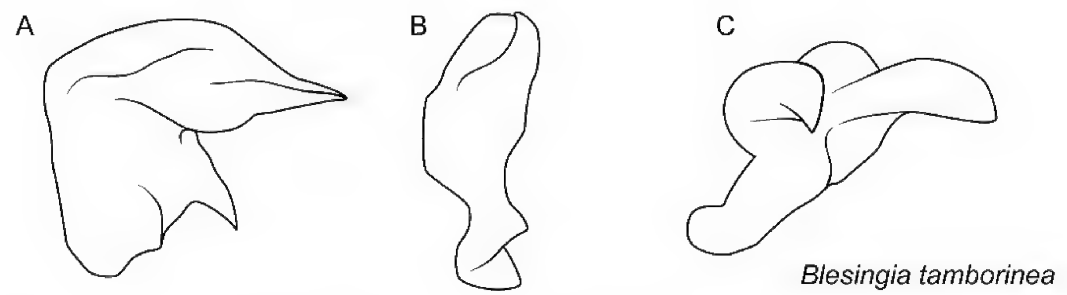

Figure 16. Drawings of male genitalia of *Blesingia tamborinea* glued to card with holotype. **A.** Phallotheca, **B.** Right paramere, **C.** Left paramere.

bladelike, diameter less than width labial segment 1. Labial segment 1 reaching past posterior margin of head, apex of segment 4 reaching apex of meso- to metacoxae. **Thorax:** Pronotum less than two times as wide as long to nearly as long as wide, dorsal surface flat to weakly swollen dorsally on posterior lobe, with or without dorsal indentation separating anterior and posterior lobes, lateral margins narrow anteriorly, widening posteriorly forming almost bell-shaped pronotum in dorsal view to nearly straight and forming trapezoidal-shaped pronotum. Thin, partially reflexed collar present. Mesoscutum exposed, scutellum weakly transversely rounded. Scent gland less than or equal to third total area of metepimeron. *Legs:* Elongate, narrow, metatibiae convexly curved near median and weakly laterally compressed medially to tubular and straight. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Elongate, lateral margins weakly constricted medially, dorsally transversely rounded. Cuneus triangular, length approximately equal to ⅓ total length of membrane to less than ¼ length of membrane, cuneal fracture angled anteromesially, and with partial thickening on lateral marfo]gin in some taxa. **Abdomen:** Narrow, elongate. GENITALIA: (figs. 15–16): **Pygophore:** Small and with minute to small protuberance on ventral-posterior surface, occupying about ⅓ to ¼ length of abdomen, ventral margin sloping upward toward apex. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small, weakly sclerotized or horsecollar shaped, located at apex of endosoma (fig. 15A, E; Schuh, 1984: fig. 782). **Phallotheca:** Fairly small, C-shaped, apex gently tapering toward point (fig. 15B, G; Schuh, 1984: fig. 784). **Right Paramere:** Paramere relatively short, smaller than left paramere, parallel sided, without an apical spine (fig. 15D). **Left Paramere:** Moderately sized; posterior process broad, with sensory pits, gently curving dorsally and with convex dorsal margin, and relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, dorsal margin below median of total height of left paramere; dorsomedial margin flat and at nearly 45° angle to base of paramere (fig. 15F; Schuh, 1984: fig. 783) to convex (fig. 15C).

Female: Macropterous, medium sized, medially constricted. Total length 2.97–3.56, width pronotum 0.80–0.96, maximum width across hemelytra 0.94–1.19. COLORATION: Similar patterning to male but much darker brown and larger portion of cuneus white (pl. 5). SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: **Head:** Clypeus not as produced as in male, vertex convex, width slightly wider than width of one eye. Eyes less than half total height of head in lateral view to over ½, dorsal surface of eyes continuous with dorsum of vertex to weakly removed. Gula more elongate and developed than in male. Antennal segment 2 long and more slender than segment 1 at basal joint with antennal segment 1, increasing in diameter distally toward segment 3, clublike in some females. Abdomen parallel sided, anterior half to ¼ of length posterior

from thorax sharply declining ventrally, posterior half of abdomen parallel to dorsal surface of abdomen. Ovipositor spine present. GENITALIA (fig. 44P–Q): Two separate, triangular-shaped vestibular sclerites, no visible lateral tube, but with thin apical sclerite covering vulva. Lateral margins of first gonapophyses between dorsal and ventral labiate plates sclerotized; sclerotized rings weakly sclerotized (fig. 44Q). Posterior wall mostly membranous, with posterior margin sclerotized across margin and possessing medial invagination similar to *Aitkenia* (fig. 44P), lateral regions of interramal sclerites sclerotized (fig. 44P).

HOSTS: Mostly Myrtaceae, but also recorded from Asteraceae, Chenopodiaceae, Lamiaceae, and Solanaceae.

DISTRIBUTION: Papua New Guinea and Australia.

DISCUSSION: *Blesingia* was described on the female-based type species of *B. gularis*, female *B. latezonata*, and male-based *B. tamborinea* and *B. elegans*. *Blesingia latezonata* and *B. elegans* are found to be junior synonyms of *Leucophoroptera quadrimaculata* and are synonymized. Male *B. gularis* and *B. tamborinea* represented the genus in the phylogenetic analysis of the tribe (Menard and Wooley, in press). *Leucophoroptera fasciatipennis, Aitkenia grandis, A. cantrelli,* and *Pseudoleucophoroptera* now are united in *Blesingia* and therefore are placed as new combinations or synonymized. Males are documented for the type species *B. gularis* and also for *B. fasciatipennis* (Poppius).

KEY TO THE SPECIES OF BLESINGIA

Key based on male specimens

1. Anterior half of clavus, adjacent to white transverse fascia, contrasting orange-brown . . . . . *fasciatipennis* (Poppius)
– Anterior half of clavus dark brown. 2
– Second antennal segment at least twice as long as width head 3
– Second antennal segment at most 1.5 times as long as width head 4
– Area below eyes less than ⅓ total height head; anterior margin of cuneus with white fascia . . . . . *mamai* (Schuh)
– Area below eyes greater than ⅓ total height head; anterior margin of cuneus dark brown and without fascia. . . . *promeceops* (Schuh)
– Third antennal segment and metatibia completely dark brown 5
– Third antennal segment and metatibia basally white, distally brown 6
– Width pronotum widest part of insect; base of labrum thickened and prominent. . . . . *tamborinea* Carvalho and Gross
– Width pronotum equidistant in width to posterior margin of wings, anterior to cuneal fracture; base of labrum slender and flat. . . . . *grandis* (Carvalho and Gross)
6. Width vertex greater than ⅓ total width head; at least ½ of anterior margin of cuneus with white fascia . . . . *gularis* Carvalho and Gross
7. Width vertex less than ¼ total width head; less than ⅓ of anterior margin of cuneus with white fascia . . . . . *cantrelli* (Carvalho and Gross)

Blesingia cantrelli (Carvalho and Gross), new combination

Figure 14; plates 5. 8

Aitkenia cantrelli Carvalho and Gross, 1982: 44, figs. 70–72, 118C (n. sp., descr., DV, MG).

DIAGNOSIS: Overall morphology similar to *B. gularis*, including relatively elongate head. However, width of vertex narrower than *B. gularis*, relatively swollen posterior lobe of pronotum, mostly dark brown metacoxae, and whitish scent gland differentiate two species.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, medially constricted. Total length 2.96, width pronotum 0.99, maximum width across hemelytra 0.94 (cited from original description). COLORATION: Pale brown. Eyes dark brown to purplish. Labium mostly brown with medial lightening. Antennal segment 1 golden basally, dark brown dorsally, segment 2 dark brown, segment 3 white for basal ⅓ of length, remaining area brown, segment 4 brown. Dorsolateral margin of metepisternum with thin white line, scent gland whitish. Procoxae white basally and dark distally for over half of total length, mesocoxae dark brown, metacoxae dark brown with white at distal margin with metafemora. Profemora light, mesofemora dark brown, metafemora absent in Specimens Examined. All tibiae basally dark brown, distally golden. Basal tarsomeres golden brown, distally dark brown. Hemelytra primarily dark brown, with anterior half of dark brown, with transparent

transverse fascia on anterior margin of hemelytron occupying thin strip of posterior half of anterior margin of corium, and transverses as thin strip across median of clavus (pl. 5), posterior area of clavus dark brown like remaining area of corium, transverse fascia with dark brown posterior margin to fascia that transverses across entirety of hemelytron. Anterior margin of cuneus and part of lateral margin white, occupying less than one-fifth total area of cuneus, posterior dark brown. STRUCTURE: Clypeus not visible in dorsal view, not surpassing frons anteriorly in dorsal or lateral view. Area of head below eyes in anterior view constricted laterally and width wider than width of vertex. Vertex convex, with posterior margin flat, less than ⅓ total head width and less than half width of one eye. Eyes removed from anterior margin of vertex, height greater than half total height of head, vertex not visible in lateral view. Greater than ⅓ total height of head below eyes, gula elongate, flat. Length of antennal segment 2 nearly 1.75 times total head width, weakly curving medially. Labrum thickened but not laterally compressed. Labial segment 1 apex does not extend past posterior margin of head, apex reaching base of mesocoxae. Pronotum wider than long, posterior lobe of pronotum swollen and with dorsal surface of pronotum sharply angled ventrally, weakly demarcated between anterior and posterior lobes of pronotum. Calli weakly visible. Scent gland less than one-fifth total area of metepisternum. Width of anterior margins of hemelytron equal to width of posterior margins of hemelytron. Cuneus nearly triangular with lateral margins weakly angled inset relative to lateral margins of corium, angled inward and relatively convex, length less about ⅓ total length of membrane. GENITALIA: (see Carvalho and Gross, 1982: figs. 70–72): **Pygophore:** Not examined. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small, weakly sclerotized, located at apex of endosoma. **Phallotheca:** Not examined. **Right Paramere:** Not examined. **Left Paramere**: Large; posterior process narrow for all of length, with sensory pits, and directed dorsally, relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, distance between dorsal margin of posterior process and dorsal surface of anterior process less than half total height of paramere; angle of dorsal margin of main body uniting anterior and posterior process nearly straight and at nearly 45° angle to base.

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: North Queensland.

DISCUSSION: We were able only to view habitus images of the holotype of this species and the description of the male genitalia is based on the original illustrations. Superficially this species looks similar to *B. gularis*, but the differences in the shape of the left paramere, the relatively narrow vertex, and the coloration of the coxae indicate they are separate taxa.

HOLOTYPE: **AUSTRALIA: North Queensland:** Split Rock, 14 km S of Laura, 23–26.vi.1975. G.B. Monteith 1♂ (QM).

Blesingia fasciatipennis (Poppius), new combination

Figures 14, 15 A–C; plates 5, 8

Leucophoroptera fasciatipennis Poppius, 1921: 57 (n. sp.); Schuh, 1984: 143 (disc.).

Blesingia fasciatipennis: Carvalho and Gross, 1982: 48, fig. 122 (n. comb., descr., disc., DV).

DIAGNOSIS: Recognized by orange-reddish colored interior of clavus, overall castaneous and brownish coloration (pl. 5), relatively short head with less than half of total area of head below eyes, and characters of male genitalia.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, medially constricted. Total length 3.37–3.61, width pronotum 0.95–1.02, maximum width across hemelytra 0.99–1.19. COLORATION: Brown, pale brown, and castaneous. Eyes deep red to purple. Labium brown. Antennal segment 1 golden, segment 2 brown, segment 3 pale basally for approximately ¼ total length and brown distally for remaining length, segment 4 completely brown. Dorsolateral margin of metepisternum and scent gland with relatively narrow white band, width equal to about one-fifth of total width of scent gland. Procoxae golden, mesocoxae reddish brown, metacoxae

dark basally pale distally for less than half of total length. Pro- and mesofemora pale brown, metafemora dark brown. Pro- and mesotibiae basally dark brown, distally golden, with metatibia pale apically at joint with metafemur then dark brown midpoint where it transitions to golden and with parallel rows of dark spicules. Tarsomeres golden brown. Hemelytra mostly brown, with anterior half of clavus orange, with transparent transverse fascia on anterior margin of hemelytron occupying most of anterior margin of corium and transverses median of clavus, posterior area of clavus dark brown like remaining area of corium, transverse fascia with dark brown posterior margin to fascia that transverses across entirety of hemelytron. Posterolateral margins of corium reddish castaneous or dark brown above cuneal fracture. Anterior margin of cuneus and part of lateral margin white, occupying less than one-fifth total area of cuneus, posterior dark brown. Membrane pale brown, veins without pigmentation. STRUCTURE: Clypeus not visible in dorsal view, not surpassing frons anteriorly in dorsal or lateral view. Area of head below eyes in anterior view constricted laterally, but width wider than width of vertex. Vertex weakly concave, with posterior margin flat. Eyes strongly removed from anterior margin of vertex, height greater than half total height of head, obscuring vertex in lateral view, posterior margin of eyes obscures anterior margin of pronotum. Less than ⅓ total height of head below eyes, gula short, flat. Length of antennal segment 2 greater than 1.5 times total head width, weakly curving medially. Labrum slender, not laterally compressed. Labial segment 1 apex past posterior margin of head, apex of segment 4 reaching apex of metacoxa. Pronotum less than two times as wide as long, dorsally surface flat and lacking dorsal demarcation between anterior and posterior lobes of pronotum, lateral margins straight and forming trapezoidal shape in dorsal view. Calli weakly visible. Scent gland approximately third of total area of metepimeron. Hemelytron lateral posterior margins wider than posterior margin of pronotum. Cuneus nearly triangular with lateral margins weakly angled inward and convex, length less than ⅓ total length of membrane, and with partial thickening on lateral margins of cuneus in area occupied by white margin. GENITALIA: (fig. 15A–C): Pygophore occupying about ¼ length of abdomen, ventral margin of pygophore weakly sloping upward toward apex. Secondary gonopore sclerotized, forming horse-collar shape (fig. 15A). Posterior process of left paramere relatively narrow for genus, dorsomedial margin between anterior and posterior processes convex anterior to anterior process, dorsal surface of anterior process ventral to median of total height of left paramere (fig. 15C).

Female: Macropterous, medium sized, medially constricted. Total length 3.07–3.56, width pronotum 0.93–0.96, maximum width across hemelytra 1.01–1.19. COLORATION: Similar patterning as in male, but with much darker brown and larger portion of cuneus white (pl. 5). SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: Clypeus weakly produced and anterior to frons, sometimes visible in dorsal view. Vertex convex, width slightly wider than width of one eye. Eyes over half total height of head in lateral view, dorsal surface of eyes continuous with dorsum of vertex. Height of head below eyes greater in female than male at least ⅓ total height of head, gula more developed, elongate, and flat. Antennal segment 2 long and more slender than segment 1 at basal joint with antennal segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 at least 1.33 times total head width. Ventral surface of abdomen parallel to dorsal surface for greater than ¾ of posterior length. Remaining characters as in male.

HOSTS: Mostly Myrtaceae; also Asteraceae, Chenopodiaceae, Lamiaceae, and Solanaceae.

DISTRIBUTION: Throughout Australia.

DISCUSSION: This species was one of the initial two species described by Poppius (1921) in *Leucophoroptera*. The holotype was found in the Finnish Museum of Natural History (Museum of Zoology Helsinki) rather than the Hungarian Museum, as cited in the original literature. Carvalho and Gross (1982) presumably placed this species in *Blesingia* based on the elongate head and the narrow vertex. Schuh (1995), in an apparent lapsus, placed *L. fasciatipennis* in *Leucophoroptera*; however, in the phylogenetic analysis

of the tribe (Menard and Wooley, in press), *L. fasciatipennis* is not closely related to the type species *L. quadrimaculata,* but instead groups in a clade with the type species of *Blesingia*, *B. gularis*. Therefore we place *L. fasciatipennis* in *Blesingia*. Our association of recently collected male specimens with the female type is based on males collected with females identical to the original description and an image of the holotype taken by Christiane Weirauch (available on the PBI locality database and Discover Life website www.discoverlife.org).

HOLOTYPE: **AUSTRALIA: New South Wales**: Rylston. 1 ♀ (ZMUH) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** 9.5 km E of Balranald on Sturt Hwy, 34.702°S 143.615°E, 20 Oct 1996, Schuh and Cassis, *Atriplex nummularia omissa* Aellen (Chenopodiaceae), det. PERTH staff PERTH 05054680, 1♂ (00272032) (AMNH). Ashfield, 33.8991°S 151.1246°E, 02 Feb 1980, D.A. Doolan, 1♀ (00291395) (QDPI). Binalong, 18 Mar 1959, E. Lewis, 1♂ (00393649) (AM). Booti Booti NP, 32.27972°S 152.52444°E, 14 Nov 1996, L. Wilkie, *Leptospermum laevigata* (Gaertn.) F. Muell. (Myrtaceae), 3♀ (00274194, 00274192, 00274193) (AM); 29 Apr 1997, L. Wilkie, *Monotoca elliptica* (Sm.) R.Br. (Myrtaceae), 1♂ (00274190) (AM); 03 Apr 1998, L. Wilkie, *Chrysanthemoides monilifera* (L.) Norlindh (Asteraceae), 1♂ (00274189) *Leptospermum laevigata* (Gaertn.) F. Muell. (Myrtaceae), 1♂ (00274188) (AM). Botany Bay, 34.01657°S 151.22799°E, 35 m, 1900, Biro, 1♀ (00099712) (MZH). Broken Hill, 31.95°S 141.4333°E, 303 m, Feb 1964, P.W. Shepherd, 1♂ (00393653) (AM). Kinchega National Park, Cawndilla Campground, 32.55001°S 142.2°E, 100 m, 28 Oct 1995, Schuh and Cassis, *Eucalyptus largiflorens* F.Muell. (Myrtaceae), det. K.D. Hill 1996 NSW 395954, 2♂ (00274278, 00274280), 6♀ (00274274–00274277, 00274279, 00274283) (AM), *Eucalyptus largiflorens* F.Muell. (Myrtaceae), det. K.D. Hill 1996 NSW 395954, 6♂ (00272797, 00272799, 00272802, 00272804–00272806), 10♀ (00272796, 00272798, 00272800–00272801, 00272803, 00272807–00272811) (AMNH). Myall Lakes National Park, 32.487°S 152.39216°E, 14 Dec 1996, L. Wilkie, *Leptospermum laevigatum* (Gaertn.) F. Muell. (Myrtaceae), 1♀ (00274186) (AM); 01 Jun 1997, L. Wilkie, 1♀ (00274187) (AM); 04 Apr 1998, L. Wilkie, *Leptospermum laevigatum* (Gaertn.) F. Muell. (Myrtaceae), 1♀ (00274191) (AM). **Queensland:** Mid. Queensland, 1942, Unknown, 3♀ (00345586–00345588) (BMNH). mid.Queensl, 1942, Unknown, 3♀ (00354486, 00354488–00354489) (BMNH). Brisbane, 27.46785°S 153.02801°E, 20 Nov 1935, H. Hacker, 1♀ (00291397) (QDPI). Cape York Peninsula, 24.5 km SE of Laura, 15.68297°S 144.59136°E, 127 m, 25 May 2006, Cassis, Barrow, Finlay, Symonds, 2♂ (00392740, 00392741) (AMNH). **South Australia:** 15 km W of Tailem Bend, 12 May 1980, G., J. & A. Holloway, 1♀ (00291394) (QDPI). Oraparinna Nat. Pk. nr Oraparinna Crk., 15 Jun 1978, J.A. Forrest, 1♀ (00169259) (SAMA). Tea Tree Swamp, 6 mi W of Warooka, 27 Jan 1962, P. Aitken, 1♀ (00169263) (SAMA). **Tasmania:** 0.5 km SE of Couta Rocks: "Murphy's Spring," terminus of C214, Mick Murphy's House, 41.18012°S 144.68716°E, 8 m, 24 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Melaleuca ericifolia* Sm. (Myrtaceae), det. Field ID, 1♀ (00108591) (AMNH). Pelion Hut, 3 km S Mt. Oakleigh, 41.83333°S 146.05°E, 18 Nov 1991–23 Nov 1991, E. Nielsen, G. Clark, 1♂ (00291396) (QDPI). **Western Australia:** 63 km E by N of Norseman, 06 May 1983, E.S. Nielson & E.D. Edwards, 1♂ (00168813) (ANIC). Forest Grove Road, 0.9 km E of Caves Road, 34.07227°S 115.0462°E, 60 m, 15 Dec 1997, Schuh, Cassis, Brailovsky, *Kunzea glabrescens* Toelken (Myrtaceae), det. PERTH staff PERTH 05056330, 3♀ (00274130–00274132) (AM). Mosman Park, Perth, 32.0209°S 115.7687°E, 20 m, 24 Nov 1998, G. Cassis, *Agonis flexuosa* (Willd.) Sweet (Myrtaceae), 3♀ (00196039–00196040, 00196042) (AM); 30 Nov 1998, G. Cassis, *Hemiandra glabra* Benth. (Lamiaceae), 8♀ (00196028–00196035) (AM); 05 Dec 1998, G. Cassis, *Eucalyptus* sp. (Myrtaceae), 2♀ (00196041, 00196044) (AM), *Hemiandra glabra* Benth. (Lamiaceae), 4♂ (00196022–00196024, 00196027), 2♀ (00196025, 00196026) *Agonis flexuosa* (Willd.) Sweet (Myrtaceae), 2♂ (00196037, 00196038) (AMNH); 15 Nov 1999, R.T. Schuh and G. Cassis, *Eucalyptus* sp. (Myrtaceae), det. PERTH staff PERTH 05670969, 1♂ (00202588), 1♀ (00202589) (WAMP). Perth, 31.9333°S 115.8333°E,

32 m, 07 Dec 1971, J.A. Slater, *Melaleuca rhaphiophylla* Schauer (Myrtaceae), 1♂ (00195659) (AMNH). Roebuck Plains, 17.96°S 122.435°E, 21 Jul 1996–24 Jul 1996, N. Reygaert, 2♂ (00393654, 00393655) (AM).

Blesingia grandis (Carvalho and Gross), new combination
Figure 14; plate 5

Aitkenia grandis Carvalho and Gross, 1982: 45, figs. 73–75, 120 (n. sp., descr., DV, MG).

DIAGNOSIS: Coloration similar to *B. tamborinea*, but much larger in size, all femora completely dark brown, and anterior portion of hemelytron equal in width to posterior portion.

REDESCRIPTION: *Male*: Macropterous, large, elongate, medially constricted. Total length 4.06, width pronotum 1.12, maximum width across hemelytra 1.22 (cited from original description). COLORATION: Dark brown. Eyes silvery. Labium mostly brown with medial lightening. Antennal segment 1 golden basally, dark brown distally, remaining segments dark brown. Dorsolateral margin of metepisternum and scent gland with broad white margin equivalent in width to half width of scent gland. Procoxa white with reddish tinge distally, mesocoxa dark brown, metacoxa pale basally, dark distally for less than half of total length. All femora dark brown. All tibiae basally dark brown, distally golden, metafemur pale at apex with parallel rows of dark spicules. Basal tarsomeres golden brown, distally dark brown. Hemelytra primarily dark brown with transparent transverse fascia on anterior margin of hemelytron occupying posterior half of anterior margin of corium, and transverses as thin strip across median of clavus, posterior area of clavus dark brown like remaining area of corium, transverse fascia with dark brown posterior margin to fascia that transverses across entirety of hemelytron (pl. 5). Anterior margin of cuneus and part of lateral margin white, occupying less than ¼ total area of cuneus, posterior dark brown. Membrane pale brown, veins without pigmentation. STRUCTURE: Clypeus weakly visible in dorsal view, barely surpassing frons anteriorly in dorsal or lateral view. Area of head below eyes in anterior view constricted laterally and width wider than width of vertex. Vertex convex, with posterior margin flat, less than ⅓ total head width and less than width of one eye. Eyes weakly removed from anterior margin of vertex, height greater than half total height of head, vertex not visible in lateral view, posterior margin of eyes obscures anterior margin of pronotum. Greater than ⅓ total height of head below eyes, gula relatively intermediary in length for genus, flat. Length of antennal segment 2 greater than 1.5 times total head width, weakly curving medially. Labrum thickened at base for ½ of length of buccula but not laterally compressed, remaining of length slender. Labial segment 1 apex does not extend past posterior margin of head, apex of segment 4 reaching apex of mesocoxa. Pronotum as wide as long, posterior lobe of pronotum swollen and with dorsal surface of pronotum sharply angled ventrally, lacking dorsal demarcation between anterior and posterior lobes of pronotum, lateral margins straight and forming trapezoidal shape in dorsal view. Calli weakly visible. Scent gland not visible in specimen examined. Metatibia straight and tubular. Anterior margins of hemelytra nearly equal in width to posterior margins of hemelytra, dorsally convexly rounded in transverse cross section. Cuneus nearly triangular with lateral margins weakly angled inward and convex, length less about ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. GENITALIA: (see Carvalho and Gross, 1982: figs. 73–75): Posterior process of left paramere wide and tapering to point subapically, apex directed ventrally, relatively elongate compared to anterior process; anterior process stout, distance between dorsal margin of posterior process and dorsal surface of anterior process approximately at median of total height of paramere; angle of dorsal margin of main body uniting anterior and posterior process nearly straight and perpendicular to base.

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: Victoria.

DISCUSSION: Both the holotype (not examined) and the paratype examined of this species are teneral; therefore, we did not dissect the paratype to reexamine the genitalia. We redescribed the main features we could discern from the original illustrations and the external morphology of the paratype.

HOLOTYPE: **AUSTRALIA: Victoria**: 6 km S of Warburton, 27.ii.1976, A. Neboiss. 1 ♂ (MVMA)

SPECIMENS EXAMINED: **AUSTRALIA: Victoria:** 6 km S of Warburton, 27 Feb 1976, A. Neboiss, paratype, 1♂ (00392783) (MVMA).

Blesingia gularis Carvalho and Gross
Figures 14, 15 D–G, 44P–Q; plates 5, 8

Blesingia gularis Carvalho and Gross, 1982: 47, fig. 121 (n. sp., descr., DV).

DIAGNOSIS: Recognized by brown and white coloration of hemelytra (pl. 5), long brown simple setae, elongate head with correspondingly long, flat gula, expanded and laterally compressed basal area of labrum, white profemora, and structure of the male genitalia.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, medially constricted. Total length 3.32–3.76, width pronotum 1.02–1.16, maximum width across hemelytra 1.01–1.04. COLORATION: Brown, pale brown, and castaneous. Eyes deep red to purple. Labium brown. Antennal segment 1 golden, segment 2 brown, antennal segment 3 pale basally for approximately half of length and brown distally, antennal segment 4 completely brown. Dorsolateral margin of metepisternum and scent gland with relatively narrow white band, width equal to about one-eighth of total width of scent gland. Procoxae white, mesocoxae reddish brown, metacoxae dark basally pale distally for over half of length. Profemora golden and sometimes with dark brown anterior margin, meso- and metafemora brown. Pro- and mesotibiae basally dark brown, distally golden, metatibia pale apically at joint with metafemur, dark brown for remainder of length and with parallel rows of dark spicules. Tarsomeres dark brown. Hemelytra brown with transparent transverse fascia on anterior margin of hemelytron occupying most of anterior margin of corium and most of median of clavus, anterior margins of clavus darker brown than corium, with dark brown posterior margin of fascia transversing entire hemelytron (pl. 5). Posterolateral margin of corium darker brown anterior to cuneal fracture. Anterior margin of cuneus and part of lateral margin white with yellowish tinge at lateral margin, occupying less than ⅓ total area of cuneus, posterior portion dark brown. Membrane brown, veins with dark brown pigmentation. STRUCTURE: Dorsally clypeus partially visible, surpassing frons anteriorly in dorsal view. Area of head below eyes in anterior view relatively narrow and constricted laterally, width approximately same width as vertex. Vertex weakly concave, with posterior margin raised for medial half and lateral margins declining, forming shelflike appearance, width less than width of eye. Eyes weakly removed from anterior margin of vertex. Eye height greater than ½ total height of head, obscuring vertex in lateral view, posterior margin of eyes obscuring anterior margin of pronotum. Gula elongate, flat. Length of antennal segment 2 greater than 1.5 times total head width, weakly curving medially. Labrum laterally compressed and bladelike, diameter less than width labial segment 1. Labial segment 1 reaching past posterior margin of head, apex of segment 4 reaching apex of mesocoxa. Pronotum less than two times as wide as long, weakly swollen dorsally on posterior lobe but without dorsal indentation separating anterior and posterior lobes, lateral margins narrow anteriorly, widening posteriorly, forming almost a bell shape in dorsal view. Scent gland less than ⅓ total area of metepimeron. Metatibia convexly curved near median and weakly laterally compressed medially. Hemelytral posterior margins wider than posterior margin of pronotum, convex in transverse cross section. Cuneus triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, and with partial thickening on lateral margin in area occupied by white. GENITALIA: (fig. 15D–G): Pygophore about one-fifth total length of abdomen. Posterior process of left paramere relatively broad, gently curving dorsally, anterior process stout and with dorsal margin near midline for total height of paramere, dorsomedial margin nearly straight and angled 45° relative to base of paramere (fig. 15F).

Female: Macropterous, medium sized, medially constricted. Total length 2.97–3.22, width pronotum 0.80–0.88, maximum width across hemelytra 0.94–1.06. COLORATION:

Similar to male but darker brown, larger portion of cuneus white, and profemur sometimes completely dark brown (pl. 5). SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: **Head:** Clypeus flush with frons in lateral view, not visible in dorsal view. Vertex convex, width slightly wider than width of one eye. Eyes less than half total height of head in lateral view, dorsal surface of eyes continuous with vertex. Gula elongate and developed, as in male, greater than half total height of head. Antennal segment 2 clublike. Length antennal segment 2 1.2 times total head width. Pronotum more strongly bell shaped in dorsal view than in male. Abdomen parallel sided, anterior half sharply declining ventrally, posterior half of abdomen with ventral surface parallel to dorsal surface.

HOSTS: Mostly Solanaceae; also on Fabaceae.

DISTRIBUTION: Northern Australia.

DISCUSSION: *Blesingia gularis* was described based on female specimens (Carvalho and Gross, 1982). With the recent collecting efforts of Randall Schuh and Gerasimos Cassis, males are now associated with this taxon and both sexes are documented and illustrated. Superficially *Blesingia gularis* looks like members of *Gulacapsus*, but the gula in the latter taxon is a defined keel that extends posteriorly past the posterior margins of the eyes, whereas in *B. gularis* the gula is flat and does not extend past the eyes. Furthermore, *B. gularis* lacks the flattened pronotal collar of most *Gulacapsus* species.

HOLOTYPE: **AUSTRALIA: Northern Territory:** Warlock Ponds, 23.viii.1964, T.E. Woodward. 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** 8.2 km E of Mungallala, 26.46401°S 147.6248°E, 560 m, 31 Oct 1998, Schuh, Cassis, Silveira, *Solanum cf. nemophilum* F. Muell. (Solanaceae), det. Det: Royal Bot Gard. NSW NSW427370, 7♂ (00393624–00393630), 15♀ (00393631–00393645) (AM), *Solanum cf. nemophilum* F. Muell. (Solanaceae), det. Det: Royal Bot Gard. NSW NSW-427370, 9♂ (00058600, 00196045–00196051, 00196388), 24♀ (00195664, 00196052–00196053, 00196389, 00196391, 0197199, 00392742–00392759) (AMNH). Cape York Peninsula, 24.5 km SE of Laura, 15.68297°S 144.59136°E, 127 m, 25 May 2006, Cassis, Barrow, Finlay, Symonds, 1♀ (00195667) (AMNH). ca. 30 km SE of Chillagoe, on Burke Developmental Rd, 17.36519°S 144.71405°E, 547 m, 01 Jun 2006, Cassis, Barrow, Finlay, Symonds, *Tephrosia macrostachya* (Benth.) Domin (Fabaceae-Faboideae), det. RBG staff, 1♂ (00393779), 2♀ (00393777, 00393778) (AM). **Western Australia:** ca. 25 km W of Towrana Homestead, on Pimbee Rd, Pimbee Conservation Park, 25.47776°S 115.0497°E, 183 m, 04 Nov 2004, Cassis, Weirauch, Tatarnic, Symonds, *Solanum lasiophyllum* Poir. (Solanaceae), det. PERTH staff PERTH6989276, 1♀ (00195700) (AMNH).

Blesingia mamai (Schuh), new combination
Figure 14

Pseudoleucophoroptera mamai Schuh, 1984: 238, figs. 773, 775–779, 782–784 (n. sp., diag., descr., DV, figs. MG).

DISCUSSION: This species externally looks very similar to *B. fasciatipennis* as noted by Schuh (1984); however, the predominantly dark brown coloration, length antennal segment 2 nearly two times the width of the head, the relatively short head below the eyes (one-fifth the total height of head), the round metatibia, and the posterior margin of the corium abutting the cuneal fracture also white along with the anterior margin of the cuneus clearly differentiate it from the other species of *Blesingia*.

Female: Unknown.

HOSTS: Unknown; collected by traps.

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: Central Province:** Mamai Plantation E of Port Glasgow, 150 m, February 13 1965, R. Straatman collector. 1 ♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Central Province:** Mamai Platn., E of Prt Glasgow, 10.26666°S 149.5°E, 46 m, 13 Feb 1965, R. Straatman, paratype, 1♂ (00321071) (BPBM). **Southern Highlands:** Koroba, 40 km W of Tari, 5.70341°S 142.73146°E, 1727 m, 19 Sep 1963, R. Straatman, Light Trap, paratype, 1♂ (00321072) (BPBM).

Blesingia promeceops (Schuh), new combination
Figure 14

Pseudoleucophoroptera promeceops Schuh, 1984: 239, figs. 772, 774, 780, 781 (n. sp., diag., descr., DV, figs. head-pronotum).

DISCUSSION: This species is recognized by elongate face much like *B. gularis* and *B. cantrelli* (area of head below eyes greater than ⅓ total height of head), but it is distinct in having antennal segment 2 nearly two times as long as width of head, ridgelike carina on face (Schuh 1984: fig. 781), lack of a white anterior margin of cuneus, and small size of cuneus relative to hemelytral membrane.

Female: Unknown.

HOSTS: Unknown, collected in light traps.

DISTRIBUTION: Solomon Islands.

HOLOTYPE: **SOLOMON ISLANDS: SE Santa Ysabel:** Tatamba, 0–50 m, September 8, 1964, light trap, R. Straatman, 1 ♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **SOLOMON ISLANDS: Guadalcanal:** Gold Ridge–Suta (Jonapau), 9.5996°S 160.18426°E, 868 m, 26 Jun 1956, J.L. Gressitt, 1♀ (00321073) (BPBM).

Blesingia tamborinea Carvalho and Gross
Figures 14, 16; plate 5

Blesingia tamborinea Carvalho and Gross, 1982: 50, figs. 79–81, 125 (n. sp., descr., DV, MG).

DIAGNOSIS: Recognized by wide anterior portion of hemelytron, relatively swollen posterior margin of pronotum, and thickened base of labrum.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, medially constricted. Total length 3.12, width pronotum 0.98, maximum width across hemelytra 1.09. COLORATION: Brown, pale brown, and castaneous. Eyes deep red to purple. Labium brown. Antennal segment 1 golden basally, dark brown distally, remaining segments dark brown. Dorsolateral margin of metepisternum and scent gland with wide white band, width at widest point equal to about half of total width of scent gland. Procoxae white with reddish tinge distally, mesocoxae reddish brown, metacoxae dark basally pale distally for less than half of total length. Pro- and mesofemora pale brown, metafemora dark brown. All tibiae basally dark brown, distally golden, metafemora also with parallel rows of dark spicules. Basal tarsomeres golden brown, distally dark brown. Hemelytra dark brown with transparent transverse fascia on anterior margin of hemelytron occupying most of anterior margin of corium and transverses median of clavus, posterior area of clavus dark brown like remaining area of corium, transverse fascia with dark brown posterior margin to fascia that transverses across entirety of hemelytron (pl. 5). Anterior margin of cuneus and part of lateral margin white, occupying less than ¼ total area of cuneus, posterior dark brown. STRUCTURE: Clypeus not visible in dorsal view, not surpassing frons anteriorly in dorsal or lateral view. Area of head below eyes in anterior view weakly constricted laterally and width wider than width of vertex. Vertex convex, with posterior margin flat, width nearly equal to width of one eye and less than ⅓ total head width. Eyes weakly removed from anterior margin of vertex, height greater than half total height of head, vertex visible in lateral view. Greater than ⅓ total height of head below eyes, gula short, flat. Length of antennal segment 2 greater than 1.5 times total head width, weakly curving medially. Labrum thickened at base for ½ of length of buccula but not laterally compressed, remaining of length slender. Labial segment 1 apex does not extend past posterior margin of head, apex of segment 4 reaching apex of mesocoxa. Pronotum less than two times as wide as long, posterior lobe of pronotum swollen and with dorsal surface of pronotum sharply angled ventrally, lacking dorsal demarcation between anterior and posterior lobes of pronotum, lateral margins straight and forming trapezoidal shape in dorsal view, Scent gland approximately ½ of total area of metepimeron. Metatibia straight and tubular. Anterolateral margins of hemelytron wider than posterior margins. Cuneus nearly triangular with lateral margin weakly angled inward and convex, length less about ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, and with partial thickening on lateral margins of cuneus in area occupied by white margin. GENITALIA (fig. 16): **Pygophore:** Small, about ⅓ total length of abdomen, with small protuberance on ventral-posterior surface, ventral margin weakly sloping upward

toward apex. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore apical, small, weakly sclerotized or horse-collar shaped (Carvalho and Gross, 1982: fig. 79). **Phallotheca:** C-shaped, apex gently tapering to a point (fig. 16A). **Right Paramere:** Moderately sized, smaller than left paramere, parallel sided (fig. 16B). **Left Paramere:** Moderately sized; posterior process of medium width and gently curving ventrally, relatively elongate compared to anterior process (fig. 16C; Carvalho and Gross, 1982: fig. 80).

Female: Unknown.

HOSTS: Unknown; collected at M.V. Light.

DISTRIBUTION: Queensland.

NOMENCLATURAL NOTES: *Blesingia tamborinea* was spelled two different ways in the original work: *B. tamborinea* in the description and illustrations and *B. tamborinei* in the key and introduction. As first revisers, we select *Blesingia tamborinea* as the correct spelling due to its association with the original description.

DISCUSSION: The holotype of this species is badly damaged, with the legs glued separately on the card, the abdomen and one-half of the hemelytron missing. However, the shape of the pronotum, the antennal coloration, and the overall coloration still allowed for the identification of one additional specimen. The male genitalia are described based on the original description and images of the genitalia from the holotype, because the additional specimen examined is the only intact specimen for the species and we therefore chose not to dissect it.

HOLOTYPE: **AUSTRALIA: Queensland:** Tamborine Mountain, 17.iii.1964, G. Monteithi. 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** Kenmore, 08 Jan 1977, M.A. Schneider, 1♂ (00393672) (AM).

Collessicoris Carvalho and Gross
Figures 17–18, 44R–S; plate 5

Collessicoris Carvalho and Gross, 1982: 53 (n. gen., descr.).

TYPE SPECIES: *Collessicoris bellissimus* Carvalho and Gross, 1982, by original designation.

DIAGNOSIS: Recognized by relatively flat, wide head, yellow transverse fascia in addition to white transverse fascia (pl. 5), presence of long, erect setae without hemelytral punctation, and flat hemelytral margins. Female recognized by wide head nearly as wide as width of posterior margin of pronotum, clublike antennal segment 2, and brachypterous hemelytra.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, weakly medially constricted. Total length 2.92–3.07, width pronotum 0.88–0.89, maximum width across hemelytra 0.92–0.94. COLORATION: Brown, pale brown, and castaneous. **Head:** Brown. Eyes deep red to purple. Labium brown with medial paler. Antennal segment 1 golden, segment 2 golden basally brown distally, segment 3 pale basally for approximately one-eighth of total length and brown distally, segment 4 completely brown. **Thorax:** Pronotum, scutellum, and thorax dark brown. Dorsolateral margin of metepisternum and scent gland with relatively narrow orange-yellow band, width equal to about ¼ of total width of scent gland. *Legs:* Pro- and mesocoxae brown basally for most of length golden distally at joint with femora, metacoxa dark basally for half of length and pale distally for remainder of length. Profemur brown basally and lightening to pale brown distally, meso- and metafemora brown. Pro- and mesotibiae basally dark brown, distally golden, with metatibia pale at joint with metafemur, dark brown for remainder of apical half and then transitioning back to golden for remainder of proximal half, with parallel rows of dark spicules along entire length. Basal tarsomeres golden, distally dark brown. *Hemelytra:* Anterior margin of corium dark brown along with anterior half of clavus transitioning into transparent complete fascia occupying up ⅓ of total area of anterior portion of corium and thin strip at median of clavus but not extending medially to claval suture (pl. 5). Posterior to transverse fascia dark brown margin extending across entire width of hemelytron, followed by yellowish-gold diffuse transverse fascia also extending across entirety of hemelytron anterior to midpoint. Posterior area of corial margin with lateral transparent areas, remainder of corium dark brown. Over ⅓ of

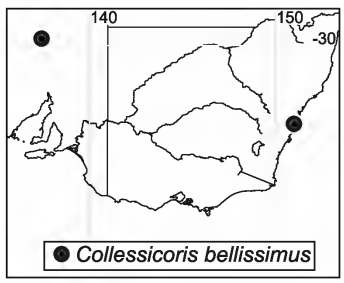

Figure 17. Distribution map of *Collessicoris bellissimus* (southeastern Australia).

total area of cuneus white posterior to claval fracture with yellowish tinge at lateral margins, posterior dark reddish brown. Membrane pale brown. **Abdomen:** Brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with long, erect pale brown setae. Medial portion of hemelytron and midpoint of claval suture with reflective patches. STRUCTURE: **Head:** Relatively flat anteroposteriorly, dorsally clypeus weakly visible, barely surpassing frons anteriorly in dorsal view. Cyberial muscle attachment sites visible on surface of frons. Area of head below eyes in anterior view relatively wide and short. Vertex flat, with posterior raised for medial half and lateral margins declining, forming shelflike appearance, width greater than width of eye. Eyes nearly continuous with anterior margin of vertex. Eye height greater than 1.5 total height of head, vertex visible in lateral, posterior margin of eyes obscures anterior margin of pronotum. Nearly ⅓ of total height of head below eyes, gula short, flat. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and narrower in diameter than segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 nearly 1.5 times total head width, weakly curving medially. Antennal segments 3 and 4 slender and less than half length of segment 2. Labrum narrow. Labial segment 1 exceeding posterior margin of head, apex of segment 4 extending past apex of mesocoxa. **Thorax:** Pronotum less than two times as wide as long, weakly swollen dorsally on posterior lobe, but without dorsal indentation separating anterior and posterior lobes, lateral margins angled, straight, forming trapezoidal-shaped pronotum in dorsal view. Anterior margin with thin, partially reflexed collar. Mesoscutum hidden, scutellum elevated anteriorly compared to posterior portion, whole structure transversely round-

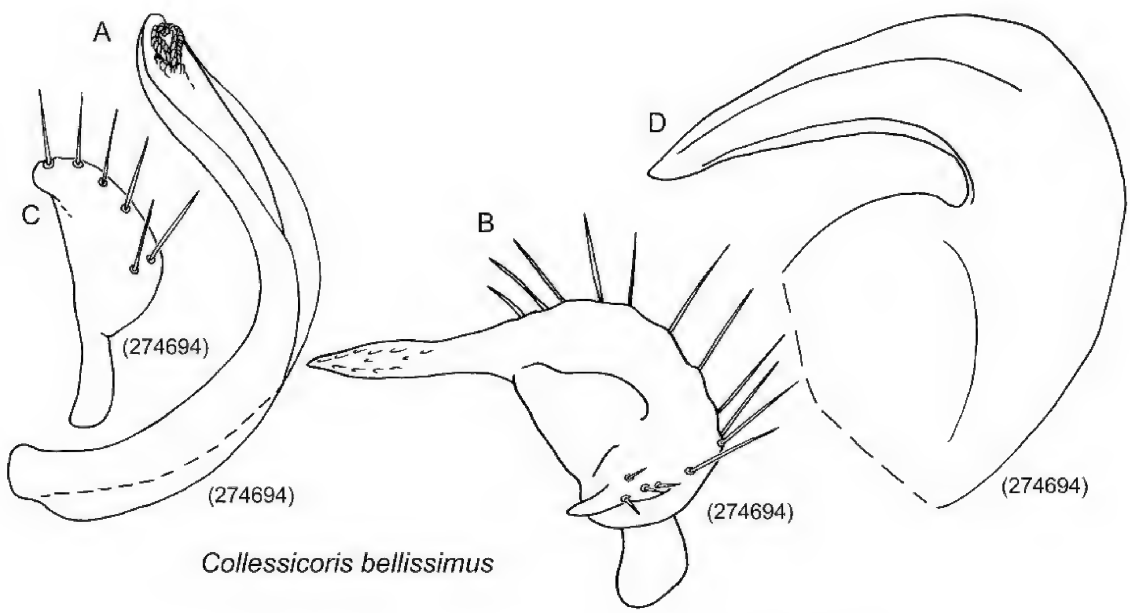

Figure 18. Male genitalia of *Collessicoris bellissimus* (A–D).

ed. Scent gland greater than a third of total area of metepimeron. *Legs:* Elongate, rounded, metatibia convexly curved near median and weakly laterally compressed medially. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Elongate, lateral margins weakly constricted medially and posterior margins wider than posterior margin of pronotum, hemelytra flat on dorsal surface of body and not obscuring lateral margins of thorax and abdomen. Lateral margin of corium anterior cuneal fracture swollen and elongated, forming lobelike structure. Cuneus triangular, length slightly greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, and with partial thickening on lateral margins of cuneus in area occupied by white margin. **Abdomen:** Narrow, elongate. GENITALIA: (fig. 18): **Pygophore:** Small, unelaborated, occupying about one-fifth length of abdomen, ventral margin weakly sloping upward toward apex. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore apical, small, horse-collar shaped (fig. 18A). **Phallotheca:** Fairly small, C-shaped, apex gently tapering to a point (fig. 18D). **Right Paramere:** Moderately sized, smaller than left paramere, expanded to one side at base, tapering to pointed apex (fig. 18C). **Left Paramere:** Moderately sized; posterior process narrow and with dorsal margin medially convex, gently curving anteriorly, relatively elongate compared to anterior process, and with sensory pits; anterior process stout, dorsal surface far removed from posterior process and median of total height (fig. 18B).

Female: Brachypterous, medium sized, medially constricted. Total length 2.72–2.92, width pronotum 0.82–0.88, maximum width across hemelytra 0.81–0.89. COLORATION: Similar patterning as in male, but with larger portion of anterior segment 2 yellow and more of total area of cuneus white. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: **Head:** Head much wider than in male, nearly equal in width to posterior margin of pronotum and wider than width of anterior margin. Clypeus produced, exserted in dorsal view. Vertex convex, width two times as wide as width of one eye. Eyes approximately half total height of head in lateral view, dorsal surface of eyes continuous with vertex. Gula short, flat, and more developed than in male, greater than ⅓ total height of head below eyes. Antennal segment 2 long and more slender than segment 1 at basal joint with antennal segment 1, increasing in diameter distally toward segment 3, clublike. Length of antennal segment 2 just longer than total head width. **Thorax:** Pronotum less than two times as wide as long, anterolateral margins nearly straight and forming box shape in dorsal view. Mesoscutum and anterior margin of scutellum hidden by posterior margin of pronotum, scutellum weakly transversely rounded. *Hemelytra:* Apex subapical to posterior margin of abdomen, lateral margins weakly medially constricted. Cuneus shorter than in male, fracture angled anteromesially. **Abdomen:** Parallel sided, anterior half sharply declining ventrally, posterior half of abdomen parallel to dorsal surface of abdomen. Ovipositor spine present. GENITALIA (fig. 44R–S): Two relatively large, separate, triangular-shaped vestibular sclerites, lateral tube absent, narrow apical sclerite over vulva between two vestibular sclerites, sclerotized areas present on lateral margins of first gonapophyses between dorsal and ventral labiate plates, sclerotized rings weakly sclerotized (fig. 44R). Posterior wall mostly membranous, with posterior margin sclerotized and flat, lateral region of interramal sclerite sclerotized (fig. 44S).

HOSTS: Goodeniaceae.

DISTRIBUTION: Southeastern Australia.

DISCUSSION: Only the type species *C. bellissimus* is currently known for this genus. This taxon is distinctive compared to all other Leucophoropterini in color patterning and the shape of the head and pronotum in males and females (pl. 5).

Collessicoris bellissimus Carvalho and Gross
Figures 17–18, 44R–S; plate 5

Collessicoris bellissimus Carvalho and Gross, 1982: 53, figs. 89–92, 127 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: See generic diagnosis.

DESCRIPTION: See generic description.

HOSTS: *Goodenid ovata* Sm. (Goodeniaceae).

DISTRIBUTION: Eastern Australia.

DISCUSSION: Previous to this work the species was known from a female holotype and a broken male specimen designated as a paratype. The redescription of the genus includes a more detailed assessment of the male somatic and genitalic characters.

HOLOTYPE: **AUSTRALIA: New South Wales:** Durras Lake, South Coast, 22.ii.1965, D.H. Colless 1♀ (ANIC) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** Otford, 34.215°S 151.001°E, 10 Feb 1962, D.K. McAlpine, 1♂ (00393677) (AM); 24 Nov 1962, D.K. McAlpine, 1♀ (00393691) (AM). Royal National Park, Lady Carrington Drive, 34.15°S 151.0293°E, 78 m, 14 Nov 2001, Cassis, Schuh, Schwartz, Silveira, 3♂ (00274200–00274202), 9♀ (00274203–00274206, 00274208–00274209, 00274212–00274213, 00274215) *Goodenia ovata* Sm. (Goodeniaceae), det. NSW staff NSW666420, 1♀ (00274198) (AM), 1♀ (00274210) *Goodenia ovata* Sm. (Goodeniaceae), 2♂ (00128239, 00128241), 1♀ (00128240) *Goodenia ovata* Sm. (Goodeniaceae), det. NSW staff NSW666420, 7♀ (00128242–00128248) (AMNH). **South Australia:** 139.2 km SE of William Creek, Finnis Springs (63 km NW of Maree), 29.60001°S 137.4175°E, 21 m, 07 Nov 2001, Cassis, Schuh, Schwartz, 1♂ (00274695) (AM), 1♂ (00274694), 1♀ (00274693) (AMNH).

Ctypomiris Schuh
Figures 19–20; plate 5

Ctypomiris Schuh, 1984: 221 (n. gen., descr., disc.).

TYPE SPECIES: *Ctypomiris brendae* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by posterior lobe of pronotum swollen, convex in lateral view and completely obscuring mesoscutum in dorsal view, shoulderlike humeral angles in dorsal view, presence of flat pronotal collar, punctate and flat hemelytron with weak medial constriction, lateral posterior margin of hemelytron expanded into lobelike process anterior and dorsal to cuneal fracture, R+M vein terminating at midpoint of hemelytron, lateral posterior margin of corium with transparent area, partial transparent transverse fascia, posterior area of cuneus darker than remainder of hemelytron, and spinelike apical processes of endosoma.

Female: Similar to male but smaller in size, with wider vertex, head below eyes more produced anteriorly and ventrally, antennal segment 2 narrower, and pronotum appearing less swollen in lateral view.

HOSTS: Unknown.

DISTRIBUTION: Solomon Islands and Papua New Guinea.

DISCUSSION: *Ctypomiris* is unique for Leucophoropterini in possessing shoulderlike humeral angles of the pronotum and having a protruding spiculate process at the apex of the endosoma (fig. 20; Schuh, 1984: figs. 703, 706). The majority of Leucophoropterini have a simple, blunt, unadorned endosomal apex (e.g., *Ausejanus* spp.).

Ctypomiris brendae Schuh
Figure 19

Ctypomiris brendae Schuh, 1984: 213, figs. 699–705 (n. sp., diag., descr., DV, figs. head-pronotum, MG).

DIAGNOSIS: Recognized by characters in generic diagnosis, its castaneous coloration, relatively small eyes, majority of length of head anterior to anterior margin of eyes, weakly swollen pronotum, and form of male genitalia.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Solomon Islands.

HOLOTYPE: **SOLOMON ISLANDS: Malaita**: Tangtalau-Kwalo, 200 m, 30 Sep 1957, J.L. Gressitt, 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **SOLOMON ISLANDS: Malaita:** E. of Kwalo (E. of Auki), 8.76234°S 160.70578°E, 350 m, 28 Sep 1957, J.L. Gressitt, paratype, 1♂ (00321081), 1♀ (00321084) (BPBM). Tangtalau-Kwalo, 200 m, 30 Sep 1957, J.L. Gressitt, paratype, 1♀ (00321085) (BPBM).

Ctypomiris kokure Schuh
Figure 19

Ctypomiris kokure Schuh, 1984: 213, figs. 699, 706–714 (n. sp., diag., descr., figs. head-pronotum, SEM).

DIAGNOSIS: Recognized by castaneous body, hemelytron castaneous anteriorly, and yellowish-golden posterior to apex of

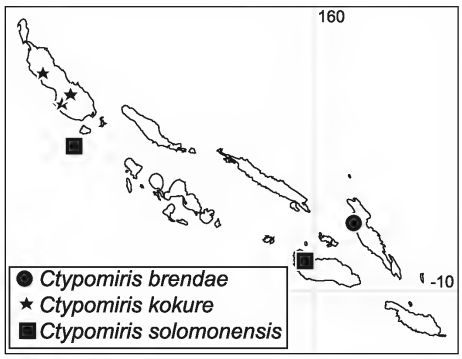

Figure 19. Distribution map of *Ctypomiris spp.*

scutellum, less than ⅓ of total length of head anterior to anterior margin of eyes, and form of male genitalia.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: Bougainville Province:** Kokure, nr. Crown Prince Ra., 900 m, Jun 11, 1956, J.L. Gressitt, 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Bougainville Province:** Boku, 6.566°S 155.35°E, 50 m, 03 Jun 1956, E.J. Ford, Jnr, paratype, 1♀ (00095319) (AMNH). Kokure, 6.00031°S 154.9994°E, 690 m, 15 Jun 1956, J.L. Gressitt, paratype, 1♀ (00321080) (BPBM). Kokure, nr. Crown Prince Ra., 6.39286°S 155.50237°E, 900 m, 09 Jun 1956, J.L. Gressitt, paratype, 1♂ (00321078), 1♀ (00321079) (BPBM); 10 Jun 1956, J.L. Gressitt, paratype, 1♀ (00196060) (AMNH), paratype, 1♀ (00321077) (BPBM).

Ctypomiris solomonensis, new species
Figures 19–20; plate 5

DIAGNOSIS: Recognized by small size, completely yellowish-white clavus and corium and apex of scutellum (pl. 5), yellowish-brown to castaneous head, dark brown pronotum, membrane golden basally and brown distally, completely golden appendages, meso- and metathoracic pleura and all abdominal segments excluding dark brown pygophore, and characters of male genitalia.

DESCRIPTION: *Male*: Macropterous, small, weakly medially constricted. Total length 2.38–2.52, width pronotum 0.73–0.76, maximum width across hemelytra 0.77–0.79.

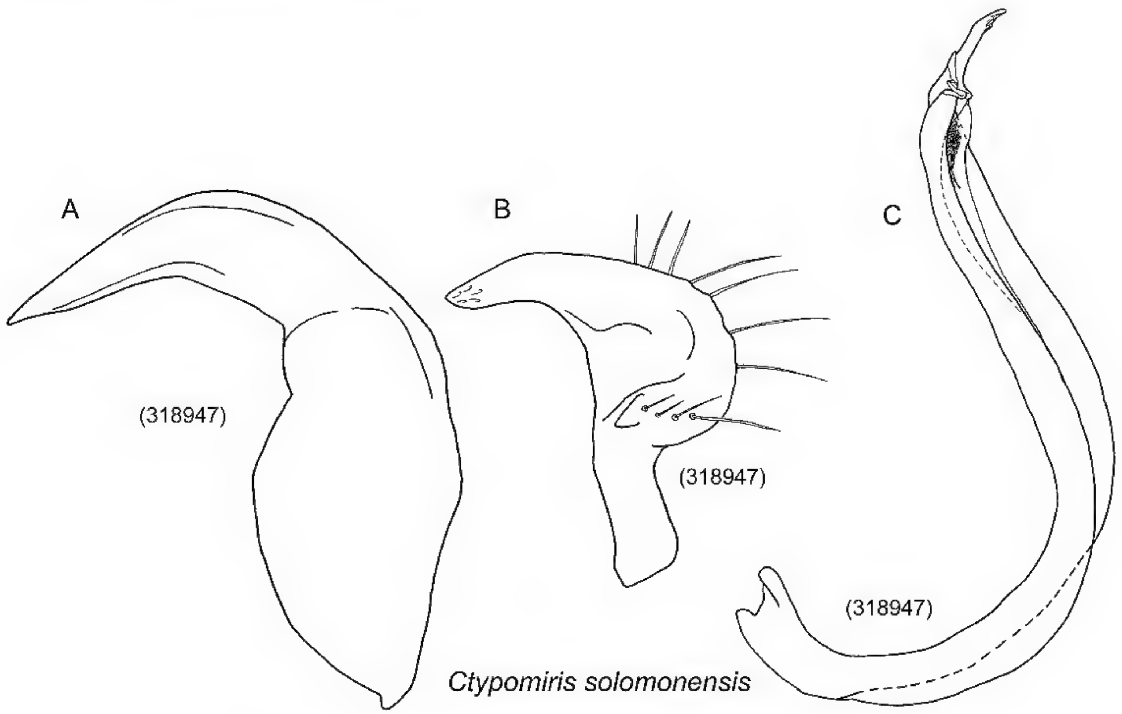

Figure 20. Male genitalia of *Ctypomiris solomonensis* (A–C).

COLORATION: Dark brown and golden yellow. **Head:** Yellow brown to castaneous, generally paler along anterior margin. Eyes deep red to dark purple. Labium golden. Antennal segment 1 golden, segment 2 golden with distal margin with antennal segment 3 dark brown, segment 3 golden basally, brown distally, segment 4 brown. **Thorax:** Pronotum, thoracic pleura, and anterior ⅔ of scutellum dark brown. Dorsolateral margin of metepisternum dark brown, ventral area of scent gland golden, anterior area dark brown like thoracic pleura. *Legs:* All coxae golden. All femora orange-golden. Tibiae basally orange, distally golden, metatibia with parallel rows of dark spicules. All tarsomeres golden. *Hemelytra:* Golden with transparent partial transverse fascia limited to anterior area of corium and possessing dark posterior margin, lateral posterior margins of corium also possessing transparent areas anterior to lobelike extension overlapping cuneal fracture (pl. 5). Transparent area present below dark brown tinted apex of claval commissure, occupying majority of surface anterior to anterior margin of hemelytral membrane and with dark brown posterior margin. Cuneus primarily white with dark brown narrow band lateral to margin with membrane occupying distal ⅔ of margin. Bases of setae on hemelytron dark brown. Membrane golden basally adjacent to white area of cuneus, brown for remainder of length and continuous with brown band of cuneus, veins in brown portion of membrane pigmented dark brown. **Abdomen:** Brown to castaneous. SURFACE AND VESTITURE: Dorsal surface of body and eyes covered with long erect golden setae. Head, pronotum, and scutellum distinctly shiny. Hemelytron punctate and also possessing dark brown, erect setae. STRUCTURE: **Head:** Clypeus visible and surpassing anterior margin of frons in lateral view and visible in dorsal view. Vertex convex and flat along posterior margin, width nearly equal to two times width of one eye. Eye height nearly equal to height of head, vertex visible in lateral view, gula obsolete. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 long and narrower in diameter than segment 1, increasing in diameter distally but still narrower than segment 1 at apex. Length antennal segment 2 equal to one nearly 1.33 times head width. Antennal segments 3 and 4 slender and less than one-fifth length segment 2. Labial segment 1 not quite attaining posterior margin of head, apex of segment 4 reaching apex of mesocoxa. **Thorax:** Pronotum nearly 1.5 times as wide as long, swollen dorsally, convex in lateral view, lateral margins of pronotum weakly concave and forming bell-shaped pronotum in dorsal view, humeral angles swollen to appear shoulderlike. Flat, narrow pronotal collar present. Mesoscutum hidden under posterior margin of pronotum, anterior of scutellum weakly swollen. Scent gland approximately third total area of metepimeron. *Legs:* Moderate length, slender with metafemur widest in diameter subapical to joint with metatibia, and appearing knee-like. Claws of moderate length, relatively broad, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins weakly medially constricted, dorsally flat. R+M vein terminating at midpoint of hemelytron. Cuneus short triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially and with lateral margins thickened in white-pigmented area. **Abdomen:** Narrow, elongate. GENITALIA (fig. 20A–C): **Pygophore**: Boxlike, small, less than one-fifth length of abdomen. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps unified by membrane, apex composed of spinelike process with ridges at apex and anterior strap folded subapically. Secondary gonopore small, weakly sclerotized, and subapical to spinelike process (fig. 20C). **Phallotheca:** Small, L-shaped, apex gently tapering toward point, base elongate (fig. 20A). **Right Paramere:** Not examined. **Left Paramere:** Moderately sized; posterior process broad, with sensory pits, and curved ventrally medially, dorsal surface appearing convex, posterior process relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, apex directed anteriorly and nearly perpendicular to base of paramere, dorsal surface below median line of total height of paramere. Dorsomedial margin between anterior and posterior processes rounded (fig. 20B).

Female: Unknown.

ETYMOLOGY: Named for the Solomon Islands.

HOSTS: Unknown; collected in light traps or canopy fogging.

DISTRIBUTION: Solomon Islands.

DISCUSSION: This species is clearly accommodated by *Ctypomiris* based on its sharing all of the diagnostic characters of the genus, particularly the apical morphology of the endosoma.

HOLOTYPE: **SOLOMON ISLANDS: Guadalcanal:** 13 mi W of Honiara, 28 Jan 1984, N.L.H. Krauss. 1♂ (00318947) (BPBM).

PARATYPES: **SOLOMON ISLANDS: Mono Isl.:** Mono Is., 300 m, 06 Nov 1980–11 Nov 1980, J.L. Gressitt, 1♂ (00318948) (BPBM).

Gulacapsus Schuh

Figures 21–22; plates 6, 8

Gulacapsus Schuh, 1984: 224 (n. gen., diag., descr.).

TYPE SPECIES: *Gulacapsus novoguinensis* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by laterally compressed, keellike gula, greater than ⅓ of total height of head, posterior margin of eyes parallel or exserted from anterior margin of pronotum, pronotal collar sometimes in form of a broad band, transverse fascia posterior to apex of scutellum, presence of a row of fringelike setae on metafemur, and presence of reflective patches and silvery setae on hemelytron.

REDESCRIPTION: *Male*: Macropterous, small, medially constricted. Total length 2.02–3.32, width pronotum 0.72–0.99, maximum width across hemelytra 0.71–1.00. COLORATION: Brown and castaneous. **Head:** Dark brown. Antennal segment 1 golden, segment 2 golden basally and pale brown distally to completely brown, segment 3 golden basally, dark brown distally, and segment 4 completely brown. **Thorax:** Pronotum, scutellum, and thorax dark brown. Dorsolateral margin of metepisternum and scent gland with narrow white margin, equal to ¼ total width of scent gland. *Legs:* Profemora golden white, and meso- and metafemora dark brown. Pro- and mesotibiae dark brown basally and golden distally, metatibia golden apically at joint with metafemur, dark brown for remainder of length and also possessing two parallel rows of dark spicules. *Hemelytra:* Anterior margin of corium dark brown along with anterior half of clavus transitioning into complete or partial white fascia with dark brown margin, to ¼ of total area of anterior portion of corium and part of median of clavus, dark posterior margin extending across entire width of hemelytron (pl. 5). Cuneus same as hemelytron or rarely with narrow white band on anterior margin. **Abdomen:** Dark brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with long, erect pale brown setae, hemelytron also possessing short and silvery setae near transverse fascia. Medial portion of hemelytron and medial area of claval suture with reflective patches. Posteroventral surface of metafemur with row of setae forming distinctive fringe appearance. STRUCTURE: **Head:** Clypeus projecting beyond anterior margin of frons in lateral view, visible in dorsal view. Vertex flat to weakly convex with posterior margin declining, width ⅓ width of one eye to nearly equal in width to one eye. Eyes weakly removed from anterior margin of vertex, vertex partially visible in lateral view, eyes greater than half of total height of head, and posterior margin of eyes obscure anterior margin of pronotum. Area below eyes appearing laterally compressed in anterior view but wider than vertex, nearly half of total height of head, gula elongate and dorsolaterally compressed, keel shaped. Antennal segment 1 inverted-coke-bottle shaped, surpassing apex of head; segment 2 long, of greater diameter than segment 1, increasing in diameter distally. Length antennal segment 2 more than 1.5 times total head width, weakly curving medially. Antennal segments 3 and 4 narrow, less than half length of segment 2. Labrum laterally compressed and nearly width of profemur to nearly same width as labium. Labial segment 1 not quite attaining posterior margin of head, apex of segment 4 surpassing procoxa to reaching mesocoxa. **Thorax:** Pronotum greater than ⅔ as long as wide, dorsal surface swollen dorsally and convex in posterior lobe of pronotum, sometimes with dorsal indentation separating anterior and posterior lobes, dorsal lateral margins narrowed anteriorly

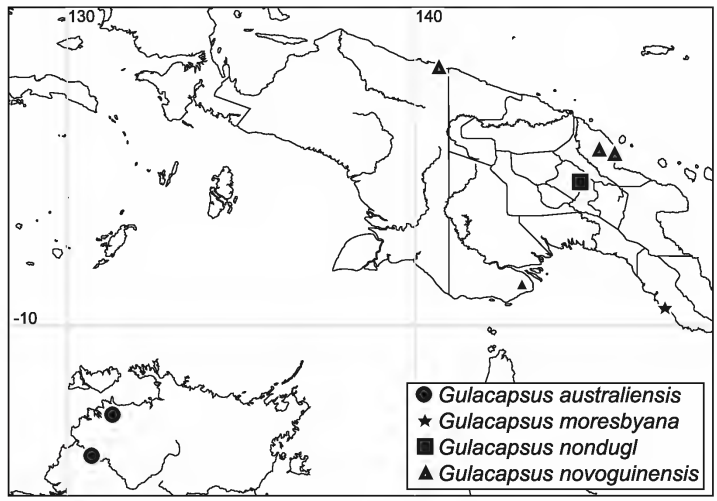

Figure 21. Distribution map of *Gulacapsus* spp.

and widening distally forming bell-shaped pronotum in dorsal view. Narrow, flat pronotal collar present. Mesoscutum exposed, scutellum transversely rounded. Scent gland less than ⅓ total area of metepimeron. *Legs:* Elongate, narrow. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Elongate, lateral margins constricted medially with anterolateral margins narrower than posterior lateral margins, transversely rounded. Cuneus narrow triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. **Abdomen:** Narrow for most of length, expanding in diameter to pygophore. GENITALIA: (fig. 22): Pygophore less than ¼ total length of abdomen. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps unified by membrane (Schuh 1984: fig. 758), apex sometimes twisted and reflexed (fig. 22B). Secondary gonopore small, horse-collar shaped (fig. 22B) to weakly sclerotized (Schuh 1984:fig. 758). **Phallotheca:** Small, L-shaped, apex gently tapering toward point, base short (fig. 22A, Schuh 1984: fig. 760). **Right Paramere:** Small, relatively short with nearly parallel lateral margins, apex rounded (fig. 22A). **Left Paramere:** Moderately sized; posterior process broad, with sensory pits, dorsal surface convex with apex directed perpendicular to base of paramere, posterior process relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, apex directed perpendicular to base of paramere, dorsal surface below median line of total height of paramere. Dorsomedial margin between anterior and posterior processes convex (fig. 22B) to straight (Schuh 1984: fig. 759).

Female: Macropterous, small, medially constricted. Total length 3.02, width pronotum 0.91, maximum width across hemelytra 0.76. COLORATION: Similar patterning as in male except antennal segment 2 more yellow basally. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: Height of head below eyes greater in female than male at least half total height of head, gula more developed and elongate. Antennal segment 2 long and more slender than segment 1 at joint with segment 1, increasing in diameter distally. Length of antennal segment 2 at least 1.5 times total head width. Ventral surface of abdomen parallel to dorsal surface for greater than half of posterior length. Ovipositor spine present. GENITALIA: Not examined.

HOSTS: Unknown, collected by trap.

DISTRIBUTION: New Guinea and the Northern Territory in Australia.

DISCUSSION: *Gulacapsus* is the only genus with the expanded gular region in the form of a flattened keel; some species of *Blesingia* (e.g., *Blesingia cantrelli*) and *Trichocephalocapsus*

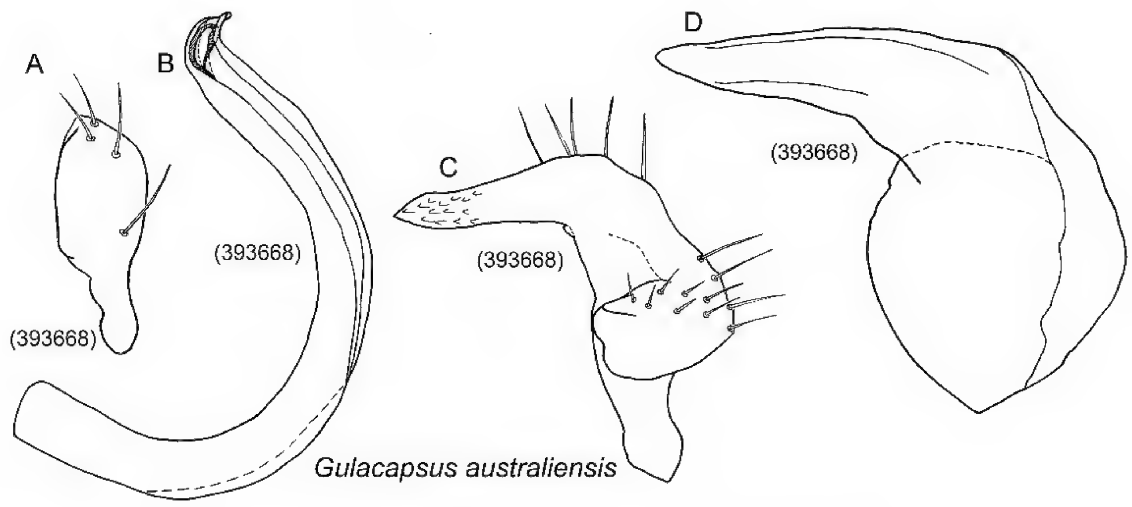

Figure 22. Male genitalia of *Gulacapsus australiensis* (A–D).

have an expanded gular region that is rounded to flat, never laterally compressed.

Gulacapsus australiensis, new species
Figures 21–22; plates 6, 8

DIAGNOSIS: Recognized by completely white profemur, tibiae dark basally and pale distally (pl. 8), and presence of spine on ovipositor. Similar in coloration to *Blesingia gularis* but differentiated by unicolorous cuneus and structural characters of head and eyes (pl. 6).

DESCRIPTION: *Male*: Macropterous, small, medially constricted. Total length 3.32, width pronotum 0.75, maximum width across hemelytra 0.89. COLORATION: Head dark brown. Eyes dark purple. Labium pale brown. Antennal segment 1 golden, segment 2 golden basally and pale brown distally, segment 3 golden basally, dark brown distally, and segment 4 completely brown. Pronotum, scutellum, and thorax dark brown. Dorsolateral margin of metepisternum and scent gland with narrow white margin, equal to ¼ total width of scent gland. Procoxa completely white, mesocoxa dark reddish brown, metacoxa brown basally for nearly half of length, white distally. Profemur golden white, and meso- and metafemora dark brown (pl. 8). Pro- and mesotibiae dark brown basally and golden distally, metatibia golden apically, dark brown for remainder of length and also possessing two parallel rows of dark spicules. Basal golden, distally dark brown. Anterior margin of corium dark brown along with anterior half of clavus transitioning into complete white fascia with dark brown margin, ⅓ of total area of anterior portion of corium and part of median of clavus, dark posterior margin extending across entire width of hemelytron. Remainder of hemelytron pale brown, lateral posterior margins of hemelytron reddish brown (pl. 6). Cuneus same coloration as hemelytron. Membrane dark brown without pigmentation on veins. Abdomen dark brown. STRUCTURE: Clypeus projecting beyond anterior margin of frons in lateral view, visible in dorsal view. Vertex flat with posterior margin declining, width ⅓ width of one eye, eyes weakly removed from anterior margin of vertex. Nearly ½ of total height of head below eyes. Length of antennal segment 2 more than 1.5 times total head width, weakly curving medially. Labrum laterally compressed but not elongate. Apex of segment 4 surpassing procoxae. Pronotum nearly ⅔ as long as wide, dorsal surface swollen dorsally and convex in posterior lobe of pronotum, with dorsal indentation separating anterior and posterior lobes, dorsal lateral margins narrowed anteriorly and widening distally forming bell-shaped pronotum in dorsal view. Scent gland less than ⅓ total area of metepimeron. Cuneus narrow, triangular, length approximately equal to ⅓ total length

of hemelytral membrane. Abdomen narrow for most of length, expanding in diameter to pygophore. GENITALIA (fig. 22); Pygophore missing from genitalia vial of holotype. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps unified by membrane, apex twisted and reflexed. Secondary gonopore small, horse-collar shaped (fig. 22B). **Phallotheca:** Small, L-shaped, apex gently tapering toward a point, base short (fig. 22A). **Right Paramere:** Small, relatively short with nearly parallel lateral margins, apex rounded (fig. 22A). **Left Paramere:** Moderately sized; posterior process broad, with sensory pits, dorsal surface convex with apex directed perpendicular to base of paramere, posterior process relatively elongate compared to anterior process; anterior process stout but without sensory pits on interior margin, apex directed perpendicular to base of paramere, dorsal surface below median line of height of paramere. Dorsomedial surface between anterior and posterior processes convex (fig. 22B).

Female: Macropterous, small, medially constricted. Total length 3.02, width pronotum 0.91, maximum width across hemelytra 0.76. COLORATION: Similar patterning as in male except antennal segment 2 more yellow basally. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: Height of head below eyes greater than in male, at least half total height of head, gula more developed and elongate. Length of antennal segment 2 at least 1.5 times total head width. Ventral surface of abdomen parallel to dorsal surface for greater than half of posterior length. Ovipositor spine present. GENITALIA: Not examined.

ETYMOLOGY: Named for this species' occurrence in Australia.

HOSTS: Unknown.

DISTRIBUTION: Northern Territory.

DISCUSSION: The endosoma of *G. australiensis* differs from genitalia illustrated by Schuh (1984) for the genus in the shape of the secondary gonopore, but the keellike gula, the shape and coloration patterns of the hemelytra, the pronotal collar, and the exserted posterior margin of the eyes clearly place this species in *Gulacapsus*.

HOLOTYPE: **AUSTRALIA: Northern Territory:** Black Jungle, nr. Humpty-doo, 24 Nov 1958, J.L. Gressitt.1♂ (00318906) (BPBM).

PARATYPES: **AUSTRALIA: Northern Territory:** Black Jungle, nr. Humpty-doo, 24 Nov 1958, J.L. Gressitt, 1♀ (00318907) (BPBM). Daly River, 13.75°S 130.7°E, 09 Aug 1980–10 Aug 1980, M.B. Malipatil, 2♀ (00393669, 00393670) (AM). Fogg Dam area, 12.56666°S 131.3°E, 14 Oct 1980, M.B. Malipatil, 1♂ (00393668) (AM).

Gulacapsus moresbyana Schuh
Figure 21

Gulacapsus moresbyana Schuh, 1984: 227, figs. 744–745, 754–755 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by characters of the generic diagnosis, large size, and extremely elongate face compared to other species of *Gulacapsus*, elongate and flattened labrum equivalent to height of head below eyes, mostly dark brown coloration, elevated posterior lobe of pronotum, and long metafemur.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown; collected in light traps.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: We did not reexamine the type specimen of *G. moresbyana,* the only known specimen. However, this is the largest *Gulacapsus* species and has the most developed and pronounced keellike gula, features that clearly differentiate it from the other species.

HOLOTYPE: **PAPUA NEW GUINEA: Central Prov.;** Daradee Plantation, 80 km N to Port Moresby, 500 m, September 7, 1959. T.C. Maa. 1♂ (BPBM) [not examined].

Gulacapsus nondugl Schuh
Figure 21

Gulacapsus nondugl Schuh, 1984: 227, figs. 744, 746 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by characters of the generic diagnosis, rich brown coloration, nearly complete transverse fascia, basally pale cuneus, and relatively large size.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown; collected in light traps.

DISTRIBUTION: Eastern Papua New Guinea.

DISCUSSION: This is the only species with the anterior margin of the cuneus white, which in combination with the characters of

the elongate keellike gula make it relatively easy to identify. *Gulacapsus moresbyana* is also large in size, but the metafemur is shorter, being nearly equal in length to the pro- and mesofemora in *G. nondugl*, and the keellike gula and labrum are less developed compared to *G. moresbyana*.

HOLOTYPE: **PAPUA NEW GUINEA: Western Highlands Prov:** Nondugl, 1600 m, July 8, 1955, J.L. Gressit. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Prov. unknown:** Akivitana River, 1550 m, 10 Jan 1965, J. & M. Sedlacek, paratype, 1♂ (00318873) (BPBM).

Gulacapsus novoguinensis Schuh
Figure 21

Gulacapsus novoguinensis Schuh, 1984: 227, figs. 744, 746 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by characters of generic diagnosis, narrow body form, small size, unicolorous cuneus, weakly swollen posterior margin of pronotum, and partial transverse fascia limited mostly to anterior of clavus.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown; collected in light traps.

DISTRIBUTION: New Guinea.

DISCUSSION: This species is one of the smallest species of *Gulacapsus* and the most similar to Australian species *G. australiensis* in shape and size. Both have the posterior lateral margins of the hemelytra nearly parallel sided with a weak medial constriction and shorter cuneus than the other species; however, the completely dark profemur and the partial transverse fascia *in G. novoguinensis* clearly separate the two.

HOLOTYPE: **INDONESIA: West Irian:** Hollandia-Bidden, 25 m, October 16, 1957, light trap, J.L. Gressitt. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 1995, O. Missa, 1♀ (00318958) (ISNB); 02 Aug 1995, O. Missa, 1♀ (00318957) (ISNB); 03 May 1996, O. Missa, 1♀ (00302015) (ISNB); 09 May 1996, O. Missa, 1♂ (00302010), 5♀ (00302011–00302014, 00302122) (ISNB); 03 Jul 1996, O. Missa, 1♀ (00302128) (ISNB); 24 Jul 1996, O. Missa, 1♀ (00196004) (ISNB). Wanuma, 4.9°S 145.31667°E, 600 m, Aug 1968, N.L.H. Krauss, paratype, 1♂ (00318874) (BPBM). **Western Province:** Oriomo River, 8.8°S 143.08333°E, 3 m, 04 Aug 1964, H. Clissold, Light Trap, paratype, 1♂ (00318875) (BPBM).

Johnstonsonius, new genus
Figures 23–24; plate 6

TYPE SPECIES: *Johnstonsonius phalarosus*, new species.

DIAGNOSIS: Recognized by small size, predominantly dark brown coloration, white transverse fascia on anterior surface of hemelytron (pl. 6), majority of hemelytral surface covered with reflective patches, wide vertex and small eyes, completely dark brown antennal segments and appendages, pygophore lacking spinelike process on ventral-posterior surface, and characteristics of male genitalia.

DESCRIPTION: *Male*: Macropterous, small, hemelytra weakly medially constricted. Total length 2.17–2.23, width pronotum 0.63–0.65, maximum width across hemelytra 0.64. COLORATION: Dark brown and white. **Head:** Dark brown. Eyes deep red to purple. Labium pale brown with distal darkening. All antennal segments brown. **Thorax:** Pronotum, scutellum, and thorax dark brown. Dorsolateral margin of metepisternum with white margin that does not extend ventrally to scent gland, scent gland unicolorous with thoracic pleuron. *Legs:* All coxae and femora dark brown. Pro- and mesotibiae basally dark brown and distally golden, metatibia basally golden at joint with metafemur then dark brown for over half of basal length and transitioning to golden on distal ⅓, metatibia also with parallel rows of dark spicules along entire length. Basal tarsomeres golden, distally dark brown. *Hemelytra:* Primarily dark brown with partial transverse fascia, most of anterior of corium whitish transparent posterior to dark brown base, partially extending into lateral margins of clavus at midpoint of length but not reaching claval suture, posterior margin darker brown that completely transverses width of hemelytron (pl. 6). Remainder of corium dark brown. Anterolateral margin of cuneus white for over half total area of cuneus, posterior dark brown.

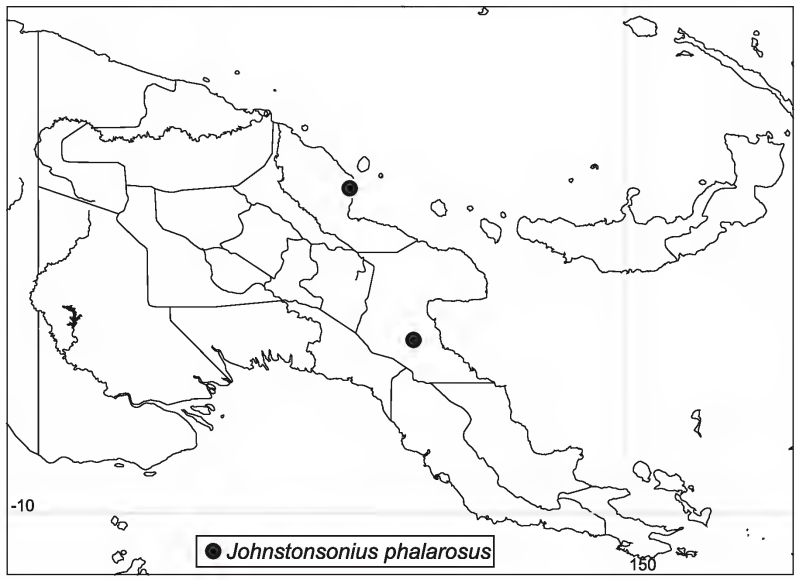

Figure 23. Distribution of *Johnstonsonius phalarosus*.

Membrane pale brown with veins lacking pigmentation. **Abdomen:** Dark brown. SURFACE AND VESTITURE: Dorsal surface of body and eyes covered with simple, recumbent setae. Head, pronotum, and scutellum distinctly dull. Majority of hemelytral surface with reflective patches, also possessing short, silvery setae adjacent and posterior to transverse fascia. STRUCTURE: **Head:** Relatively elongate with small eyes. Clypeus exserted, visible in dorsal view. Vertex convex, posterior margin flat, width equal to two times width of one eye. Dorsal margin of eyes continuous with vertex, total height of eye greater than half total height of head, vertex visible in lateral view, ap proximately ⅓ of height of head below eyes. Antennal segment 1 inverted-coke-bottle shaped, surpassing apex of head; segment 2 elongate and equal in diameter than segment 1, approximately equal diameter across length. Length of antennal segment 2 nearly 1.33 times total head width. Antennal segments 3 and 4 slender and less than half length of segment 2. Labial segment 1 surpassing posterior margin of head, apex of segment 4 surpassing apex of metacoxa. **Thorax:** Pronotum 1.5 times longer than wide, anterolateral margins narrowed compared to posterior lateral margins forming bell-shaped pronotum in dorsal view, dorsal surface weakly convex in lateral view. Narrow and flat pronotal collar present. Mesoscutum visible, scutellum transversely rounded. Scent gland approximately ¼ total area of metepimeron. *Legs:* Elongate, slender, femora not flattened. Claws small, of moderate width, pulvilli small, less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins nearly parallel sided, transversely rounded. Cuneus triangular, medial margin weakly convex, total length approximately ¼ total length of hemelytral membrane, lacking swelling along lateral margins. **Abdomen:** Narrow, parallel sided, abdominal sternite 1 wider than long. GENITALIA: (fig. 24): **Pygophore:** Small, without elaborations, occupying about ¼ total length of abdomen, ventral margin flat. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small, twisted, located at apex of endosoma (fig. 24A). **Phallotheca:** Roughly L-shaped, apex gently tapering toward point (fig. 24D). **Right Paramere:** Small, widest medially and tapering at apex, diamond shaped (fig. 24C). **Left Paramere:** Moderately sized; posterior process broad, dorsal margin

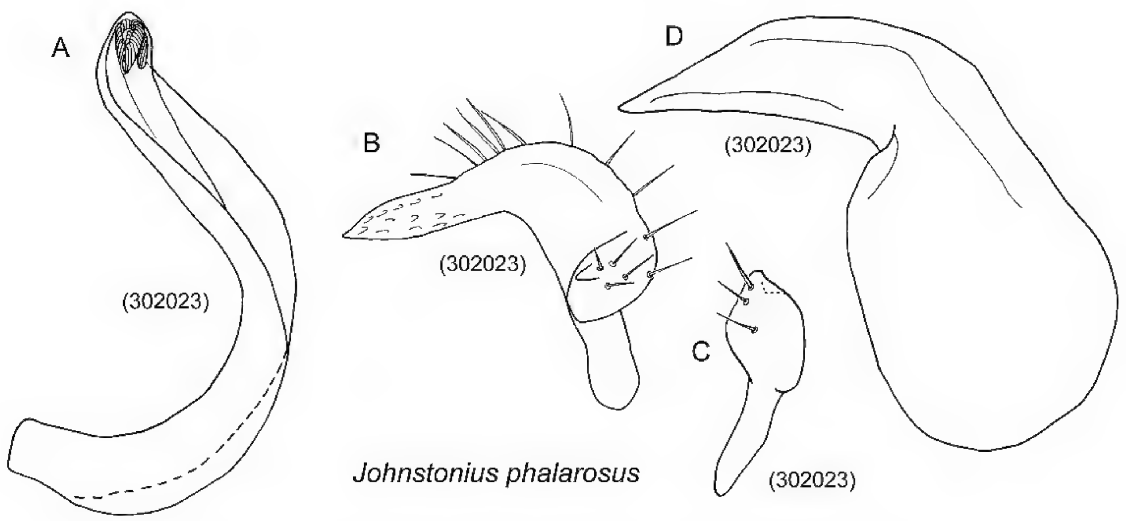

Figure 24. Male genitalia of *Johnstonsonius phalarosus* (A–D).

weakly convex medially, apex directed perpendicular to base of paramere, with sensory pits, and relatively elongate compared to anterior process; anterior process stout, with anterior margin ventral to median of total height of paramere; dorsomedial surface between anterior and posterior processes nearly straight and parallel to base of paramere (fig. 24B).

Female: Macropterous, small, parallel sided. Total length 2.08–2.33, width pronotum 0.63–0.65, maximum width across hemelytra 0.64–0.79. COLORATION: Similar patterning as in male. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: **Head:** Vertex wider than in male, two times width of one eye. Antennal segment 2 as in male, length 1.10 times total head width. Abdomen parallel sided, anterior one-fifth sharply declining ventrally, remaining ventral surface of abdomen parallel to dorsal surface of abdomen. The condition of ovipositor "spine" (e.g., fig. 44C) could not be observed as the specimen was glued ventrally on card. GENITALIA: Not examined.

ETYMOLOGY: Named for a member of Katrina Menard's doctoral committee, Spencer Johnston; masculine.

HOSTS: Unknown; collected by canopy fogging and light traps.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: The overall shape and coloration of *Johnstonsonius* is superficially similar to *Leucophoroptera;* however, species in this genus are smaller in size, and lack the spinelike process on the pygophore and the white coloration of some antennal segments and coxae as found in *Leucophoroptera.*

Johnstonsonius phalarosus, new species
Figures 23–24; plate 6

DIAGNOSIS: See generic diagnosis.

DESCRIPTION: See generic description.

ETYMOLOGY: Named after the Greek *phalaros* for the white patch on the anterior of the cuneus; masculine.

HOSTS: Canopy fogging; one specimen found with fogging of *Castanopsis* (Fagacaceae).

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 1995, O. Missa. 1♂ (00302025) (ISNB).

PARATYPES: **Madang Province:** Baiteta, 5.017°S 145.75°E, 12 May 1993, O. Missa, 2♂ (00302023, 00302024) (ISNB); 13 Jul 1995, O. Missa, 2♂ (00302028, 00302029), 2♀ (00302030, 00302031) (ISNB); 04 Aug 1995, O. Missa, 1♂ (00302026), 1♀ (00302027) (ISNB). **Morobe Province:** Wau: Namie Road, 7.33845°S 146.73412°E, 1240 m, 23 Jun 1984, W.C. Gagne and UREP III, *Castanopsis acuminatissima* (Blume) A.DC. (Fagaceae), 1♂ (00318973) (BPBM).

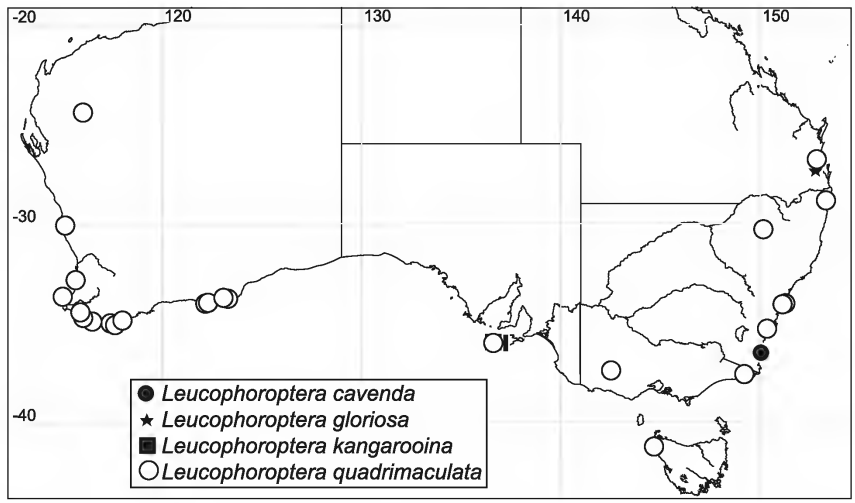

Figure 25. Distribution of *Leucophoroptera* spp.

Leucophoroptera Poppius 1921
Figures 25–26, 44T–U ; plates 6, 8

Leucophoroptera Poppius, 1921: 56 (n. gen.); Carvalho, 1958: 138 (cat.); Schuh, 1974: 304 (disc.); Carvalho and Gross, 1982: 35 (descr., disc., key to spp.); Schuh, 1984: 143 (diag., disc).

TYPE SPECIES: *Leucophoroptera quadrimaculata* Poppius, 1921, by original designation.

DIAGNOSIS: Recognized by relatively elongate hemelytra in male, dark and white coloration with majority of anterior of cuneus and anterior of corium white (pl. 6), relatively elongate head, presence of row of fringelike setae on metafemur, and structure of male genitalia. Female recognized by boxlike pronotum with anterior margin nearly equal in width to posterior margin, and parallel lateral margins of hemelytron.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.62–3.59, width pronotum 0.68–0.83, maximum width across hemelytra 0.84–0.99. COLORATION: Dark brown and white. **Head:** Dark brown to blackish. Eyes deep red to purple. Labium brown. Antennal segment 1 gold, remaining antennal segments completely dark brown. **Thorax:** Pronotum, scutellum, and thorax dark brown. Dorsolateral margin of metepisternum and scent gland with relatively thick white band, width equal to about third of total width of scent gland. *Legs:* Coxae completely dark brown or dark brown basally and white distally. Femora either completely dark brown or dark brown basally, white distally. Pro- and mesotibiae either dark brown or white, metatibia white basally, dark brown distally. Tarsomeres dark brown. *Hemelytra:* primarily dark brown, with translucent to whitish transverse fascia on anterior margin of hemelytron occupying most of anterior margin of corium and either approximately ¼ width or nearly entire width of clavus at approximately posterior ¾ of length of claval suture, with dark brown posterior margin along fascia that transverses across entirety of hemelytron (pl. 6). Lateromedial margin of corium posterior to transverse fascia weakly to strongly transparent, corium posterior to claval commissure and margins of cuneal fracture chocolate brown. Anterior margin of cuneus completely white for greater than half total length of cuneus, posterior portion dark brown to reddish brown. Membrane brown to pale brown with dark-brown colored veins. **Abdomen:** Dark brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with fine, gold simple setae, medial portion of hemelytron and medial portion of claval suture with reflective patches. Posteroventral surface of metafemur with row of setae forming distinctive fringe appearance. STRUCTURE: **Head:** Frons convex, clypeus exserted and partially visible in dorsal view of head. Vertex convex,

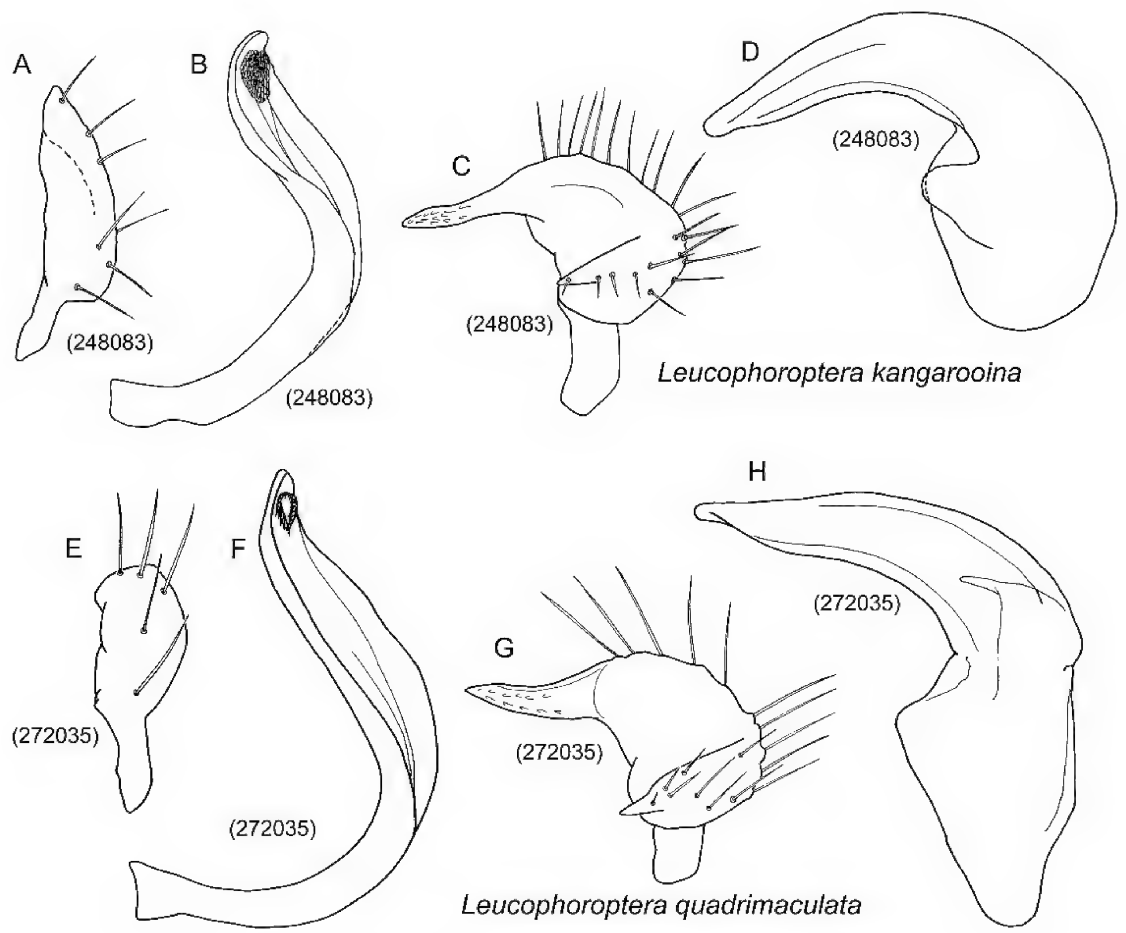

Figure 26. Male genitalia of *Leucophoroptera* spp (A–H).

posterior margin flat, width equal to or almost two times width of one eye. Area below eyes at least ⅓ total height of head in lateral view, gula well developed. Eyes confluent with dorsal surface of vertex or distinctly removed in anterior view, occupying about ⅔ total height of head in lateral view, posterior margin partially obscuring anterior of pronotum. Labial segment 1 extending past posterior margin of head, apex of labium surpassing apex of metacoxa. Antennal segment 1 inverted-coke-bottle shaped, surpassing apex of head; segment 2 long and more slender than segment 1 proximally, increasing in diameter distally. Length of antennal segment 2 ranging from over 1.5 times head width to nearly two times. Antennal segments 3 and 4 slender and less than half length of segment 2.

Thorax: Pronotum nearly two times as wide as long, no demarcation between anterior and posterior lobes laterally or dorsally, dorsal surface nearly flat, lateral margins straight, forming trapezoidal appearance in dorsal view. Calli and pronotal collar absent. Mesoscutum partially exposed, scutellum weakly transversely rounded. *Legs:* Elongate, narrow, metafemur more than 1.33 times longer than pro- and mesofemora, all femora weakly flattened dorsoventrally. *Hemelytra*: Lateral margins parallel sided, dorsally transversely rounded. Cuneus triangular, not thickened along cuneal fracture or lateral margin, relatively elongate and equal to or more than ½ total length of membrane, cuneal fracture angled anteromesially. **Abdomen:** Elongate and parallel sided. GENITALIA (fig. 26): **Pygophore:** Small and with very small

protrusion on ventral-posterior surface of apex in type species, occupying about ¼ length of abdomen, ventral margin sloping upward toward opening to almost boxlike. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating toward apex, unified by membrane. Secondary gonopore small to medium sized, located at apex of endosoma (fig. 26B, F). **Phallotheca:** Small, C-shaped, apex gently tapering toward point (fig. 26D, H). **Right Paramere:** Moderately sized, approximately same size as left paramere or smaller, with relatively wide base asymmetrically expanded on right side, forming knife shape (fig. 26A) or rounded and without distinctly pointed apex (fig. 26E). **Left Paramere:** Moderately sized; posterior process slender, with dorsal surface convex medially, apex directed dorsally (fig. 26G) or ventrally (fig. 26C), with sensory pits; anterior process stout and with dorsal surface below midpoint of total height of paramere; dorsomedial margin between anterior and posterior processes curved.

Female: Macropterous, medium sized, with nearly parallel lateral margins. Total length 2.47–2.52, width pronotum 0.71–0.73, maximum width across hemelytra 0.72–0.74. COLORATION: Similar to male, although antennal segment 2 sometimes paler proximally. STRUCTURE: Frons and clypeus more strongly projecting anteriorly, vertex concave and wider. Antennal segment 2 long and more slender than segment 1 at basal joint with antennal segment 1, increasing in diameter distally toward segment 3. Length of antennal segment 2 ranging from just shorter of 1.33 times total head width to greater than 1.66 times total head width. Pronotum relatively boxlike, with anterior margin of pronotum nearly equal in width to posterior margin. lateral margins of hemelytron parallel sided, equal to or less than width across posterior margin of pronotum. Cuneus shorter and wider than in male. Abdomen tapering apically from median or distal ⅔ of total length. GENITALIA (fig. 44T–U): Two separate, triangular-shaped vestibular sclerites, no visible lateral tube, but vulva covered by relatively wide apical sclerite, sclerotized areas present on lateral margins of first gonapophyses between dorsal and ventral labiate plates, sclerotized rings weakly sclerotized (fig. 44U). Posterior wall mostly membranous, with posterior margin sclerotized and possessing medial invagination similar to *Aitkenia* (fig. 44T) and lateral area of interramal sclerite sclerotized (fig. 44T).

HOSTS: Primarily Myrtaceae; also found on Fabaceae, Thymelaeaceae, Goodeniaceae, and Lauraceae.

DISTRIBUTION: Throughout Australia.

DISCUSSION: *Leucophoroptera* was initially described by Poppius (1921) with the inclusion of two species from New South Wales, *L. fasciatipennis* and *L. quadrimaculata,* both of which were based on females. Carvalho and Gross (1982) expanded the genus by describing four more species, also on the basis of females (*L. cavenda*, *L. nitidior*, *L. macrozonata*, and *L. fasciata*), and moved *L. fasciatipennis* to *Blesingia*. Schuh (1984) described three additional species from the Indo-Pacific (*L. novoirlandense*, *L. philippinensis*, and *L. solomonensis*) based on male specimens. A phylogenetic analysis of the tribe, including characters from both male and female specimens, found *Leucophoroptera* to be polyphyletic (Menard and Woolley, in press) and the type species, *L. quadrimaculata,* was found to group with two new species from Australia (*L. kangarooina* and *L. gloriosa*). Male somatic and genitalia characters are herein documented for *L. quadrimaculata* along with the synonymy of three species described by Carvalho and Gross (see *L. quadrimaculata*).

Leucophoroptera cavenda Carvalho and Gross

Figure 25; plates 6, 8

Leucophoroptera cavenda Carvalho and Gross, 1982: 35, fig. 115 (descr., disc., DV).

DIAGNOSIS: Male unknown, female recognized by distal half of metacoxa completely white (pl. 8), white lateral margins to abdominal tergite 1, convex lateral margins of hemelytron, and trapezoidal-shaped pronotum.

REDESCRIPTION: *Female:* COLORATION: Head dark brown to blackish. Eyes deep red to purple. Labium brown. Antennal segment 1 gold, remaining antennal segments completely dark brown. Pronotum, scutellum,

and thorax dark brown. Dorsolateral margin of metepisternum and scent gland with relatively thick white band, width equal to about third of total width of scent gland. Lateral margin of abdominal tergite 1 white. Pro- and mesocoxae completely dark brown, metacoxa dark basally, white distally for over half of length. Remaining structures of leg missing. Hemelytra primarily dark brown, with translucent to whitish transverse fascia on anterior margin of hemelytron, occupying most of anterior margin of corium and nearly extending across clavus at midpoint, with dark brown posterior margin along fascia transversing entire hemelytron (pl. 6). Remainder of hemelytron dark brown. Anterior half of cuneus completely white, posterior portion dark brown. Membrane brown with dark brown veins. Abdomen dark brown. STRUCTURE: Frons convex, clypeus exserted and partially visible in dorsal view. Vertex convex, posterior margin flat, width nearly two times width of one eye, over ⅓ total head width. Area below eyes at least ⅓ total height of head in lateral view. Eyes confluent with vertex, posterior margin partially obscuring anterior of pronotum. Apex labial segment 1 extending past posterior margin of head, apex of labium surpassing apex of metacoxa. Antennal segment 1 inverted-coke-bottle shaped, surpassing apex of head, segment 2 long and proximally more slender than segment 1, increasing in diameter distally, length of antennal segment 2 ranging from over 1.5–2 times head width. Antennal segments 3 and 4 slender and less than half length of segment 2. Pronotum nearly two times as wide as long. Calli and pronotal collar absent. Mesoscutum exposed, scutellum weakly transversely rounded. Hemelytra lateral margins convex, dorsally transversely rounded. Cuneus triangular, not thickened along anterior next to cuneal fracture or lateral margins, relatively elongate and equaling to or more than ½ total length of membrane, and with cuneal fracture angled anteromesially. Abdomen parallel sided, ovipositor parallel to dorsal margin of abdomen. Ovipositor spine present. GENITALIA: Not examined.

HOSTS: Unknown.

DISTRIBUTION: Tasmania.

DISCUSSION: We were able to view images of the holotype, which is based on one female from Tasmania, but were not able to examine the two paratypes. Although the external morphology is very similar to female *Aitkenia* with the convex lateral margins of the hemelytra and the more trapezoidal pronotum (especially *A. latevagans*), hemelytron coloration in *L. cavenda* more similar to *L. quadrimaculata* in having mostly dark brown with the anterior margin of the corium whitish to transparent. It also is distinct in having the lateral margin to abdominal tergite 1 and a majority of the metacoxa white, which was not observed for females in either of the other genera. Until males are associated, *L. cavenda* will remain in *Leucophoroptera*.

HOLOTYPE: **AUSTRALIA: Tasmania**: Hobart, Lea. Reg, No. 120,983. 1♀ (SAMA).

Leucophoroptera fasciata Carvalho and Gross

Leucophoroptera fasciata Carvalho and Gross, 1982: 38, fig. 116 (n. sp., descr., DV).

DIAGNOSIS: Female recognized by broad, complete white transverse fascia dominating anterior margin of hemelytron, weakly convex lateral margins, strongly exserted clypeus, pale basal half of antennal segment 3, and completely dark coxae.

HOSTS: Unknown.

DISTRIBUTION: New South Wales.

DISCUSSION: This taxon is currently known only from the female holotype, which we were not able to locate. The habitus illustration in the original description suggests that it may be a member of *Leucophoroptera* based on the relatively broad pronotum, the short silvery setae, and the strongly exserted clypeus. However, *L. fasciata* differs from most of the other female *Leucophoroptera* by the broad and complete white transverse fascia, which we have observed elsewhere in female Leucophoropterini only in *L. macrozonata*; that species is now placed in *Ausejanus* and is primarily dark red in coloration and not dark brown. Because we were not able to examine the type directly, and there are no associated males that would allow for examination of additional somatic and genitalic characters, we are taking the conservative approach and leave this taxon in *Leucophoroptera*.

HOLOTYPE: AUSTRALIA: New South Wales: Springwood, 1900. Biro, 1♀ (ZMUH) [not examined].

Leucophoroptera gloriosa, new species
Figure 25; plates 6, 8

DIAGNOSIS: Recognized by relatively narrow transverse white fascia with portion crossing clavus broken into two adjacent white spots (pl. 6), narrow vertex, and antennal segment 2 gold basally and dark brown distally.

DESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 2.87, width pronotum 0.83, maximum width across hemelytra 0.84. COLORATION: Eyes pinkish silver. Antennal segment 1 gold, segment 2 gold basally, dark brown distally; segments 3 and 4 missing. Dorsolateral margin of metepisternum and scent gland with relatively thick white band, width equal to about third of total width of scent gland. Procoxa completely dark, meso- and metacoxae dark brown proximally, white distally. Pro- and mesofemora brown proximally and white distally, metafemur completely brown. Pro- and mesotibiae white; metatibia white anteriorly (externally) at joint with metafemur, remainder dark brown with parallel rows of dark spicules. All tarsomeres gold. Hemelytron primarily dark brown with narrow transverse white fascia with portion crossing clavus broken into two adjacent white spots, with dark brown posterior margin traversing entirety of hemelytron (pl. 6). Lateral margin of corium posterior to transverse fascia weakly transparent, with area anterior to cuneal fracture chocolate brown. Anterior half of cuneus white, posterior portion dark brown to reddish brown. Membrane pale brown with dark-brown colored veins. SURFACE AND VESTITURE: Gold simple setae longer that in *L. quadrimaculata* and *L. kangarooina.* STRUCTURE: Frons convex, clypeus exserted and partially visible in dorsal view. Vertex convex, posterior margin flat, width equal to width of one eye. Area below eyes at least ⅓ total height of head in lateral view, gula well developed. Eyes visibly removed from dorsal surface of vertex in anterior view, posterior margin partially obscuring anterior of pronotum in lateral view. Antennal segment 2 nearly 1.5 times head width. Remaining characters as in generic description. GENITALIA: Not located in genitalia vial attached to holotype and therefore not described.

Female: Unknown.

ETYMOLOGY: Named from Mt. Glorious on which it was collected.

HOSTS: Unknown; collecting label states rain forest.

DISTRIBUTION: Queensland.

DISCUSSION: This species has several unique characters not seen in L. *quadrimaculata* and *L. kangarooina*, but is placed in *Leucophoroptera* based on the phylogenetic analysis of the tribe and the shared characters of the almost completely white cuneus (Menard and Woolley, in press). Until the genitalia are examined this taxon is placed in *Leucophoroptera.*

HOLOTYPE: **AUSTRALIA: Queensland:** Mt Glorious, 27.33333°S 152.7667°E, 750 m, 05 Feb 1961–08 Feb 1961, Rain Forest, J.L. & M. Gressit collectors, 1♂ (00321198) (BPBM).

Leucophoroptera kangarooina, new species
Figures 25, 26 A–D; plates 6, 8

DIAGNOSIS: Recognized by small size, well-defined transparent areas on posterolateral margin of corium (pl. 6), distally white pro- and mesofemora, completely white pro- and mesotibiae, and lack of a protuberance on ventral-posterior surface of pygophore. Female also recognized by pronotum less boxlike in appearance than in *L. quadrimaculata* and appearing more trapezoidal in dorsal view.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.62–2.77, width pronotum 0.68–0.73, maximum width across hemelytra 0.84–0.89. COLORATION: Eyes red to pinkish. Antennal segment 1s gold, segment 2 completely dark brown, segment 3 pale basally and dark on distal half, segment 4 dark basally. Dorsolateral margin of metepisternum and scent gland with relatively thick white band, width equal to about third of total width of scent gland. All coxae dark brown basally, white distally for approximately half of length of coxae. Pro- and mesofemora brown basally white distally, metafemur completely brown. Pro- and mesotibiae white, metatibia white anteriorly at joint with metafemur with remainder of surface dark brown with parallel rows of dark spicules. Basal tarsomeres light, distally dark brown. Hemelytron primarily dark brown with translucent to

whitish transverse fascia occupying most of anterior margin of corium and part of clavus at approximately posterior ¾ of length of claval suture, with dark brown posterior margin transversing entirety of hemelytron (pl. 6). Lateral margin of corium posterior to transverse fascia distinctly transparent. Anterior half of cuneus white, posterior portion dark brown to reddish brown. Membrane pale brown with dark-brown veins. Frons convex, clypeus exserted and partially visible in dorsal view. Vertex convex, posterior margin flat, width almost two times width of one eye. Area below eyes at least ⅓ total height of head in lateral view, gula well developed. Eyes confluent with dorsal surface of vertex in anterior view, posterior margin partially obscuring anterior margin of pronotum in lateral view. GENITALIA (fig. 26A–D): Secondary gonopore relatively large, horse-collar shaped (fig. 26B). Right paramere knife shaped (fig. 26A). Posterior process of left paramere directed ventrally, relatively narrow (fig. 26C).

Female: Macropterous, medium sized, with nearly parallel lateral hemelytral margins. Total length 2.47–2.52, width pronotum 0.71–0.73, maximum width across hemelytra 0.72–0.74. COLORATION: Same pattern as in male.

STRUCTURE: Antennal segment 2 less than 1.3 times total head width. Width of vertex over two times width of one eye. Abdomen tapering anteriorly. Remaining characters as in generic description. GENITALIA: As in generic description.

ETYMOLOGY: Named after the collecting locality of Kangaroo Island.

HOSTS: Unknown.

DISTRIBUTION: Kangaroo Island, South Australia.

DISCUSSION: Most specimens of this species are in poor condition and appear to be partially bleached, causing a paler coloration than is probably seen in nature.

HOLOTYPE: **AUSTRALIA: South Australia:** Kangaroo Island, Kelley Hills Caves Cons. Park, 35.98818°S 136.87859°E, 13 m, 27 Dec 1989, R. Wharton, 1♂ (00248080) (SAMA).

PARATYPES: **AUSTRALIA: South Australia:** Kangaroo Island, Flinders Chase National Park, Rocky River., 35.95831°S 136.65853°E, 38 m, 25 Dec 1989–06 Jan 1990, R. Wharton, 1♀ (00248087) (USNM). Kangaroo Island, Kelley Hills Caves Cons. Park, 35.98818°S 136.87859°E, 13 m, 27 Dec 1989, R. Wharton, 1♂ (00248085), 1♀ (00248084) (AM), 2♂ (00248079, 00248081) (AMNH), 2♂ (00248076, 00248082) (TAMU), 1♂ (00248083) (TAMU), 1♂ (00248077) (USNM).

Leucophoroptera quadrimaculata Poppius
Figures 25, 26 E–H, 44T–U; plates 6, 8

Leucophoroptera quadrimaculata Poppius, 1921: 57, pl. 2, fig. 2 (n. sp.); Carvalho, 1958: 138 (cat.); Schuh, 1974: 306; Schuh, 1984: 143.

Leucophoroptera nitidior Carvalho and Gross, 1982: 38 (n. sp., descr., disc.). NEW SYNONYMY.

Blesingia elegans Carvalho and Gross, 1982: 49, figs. 76–78, 124 (n. sp., descr., disc., DV, MG). NEW SYNONYMY.

Blesingia latezonata Carvalho and Gross, 1982: 49, fig. 123 (n. sp., descr., disc., DV). NEW SYNONYMY.

DIAGNOSIS: Recognized by relatively elongate and parallel-sided hemelytron in male, overall dark brown and white, anterior half of cuneus white (pl. 6), presence of reflective patches on medial portion of hemelytron, relatively elongate face but shorter in height than most members of *Blesingia*, and structure of parameres. Female recognized by boxlike shape of pronotum with anterior margin just subequal in width to posterior margin, and hemelytra relatively narrow with lateral margins parallel sided and extending past apex of abdomen.

REDESCRIPTION: *Male*: Macropterous, medium sized, elongate, and parallel sided. Total length 3.07–3.59, width pronotum 0.76–0.83, maximum width across hemelytra 0.94–0.99. COLORATION: Eyes deep red to purple. Antennal segment 1 gold, remaining antennal segments completely dark brown. Dorsolateral margin of metepisternum and scent gland with relatively thick white band, width equal to about third of total width of scent gland. Pro- and mesocoxae dark brown, metacoxa dark brown proximally, white distally. All femora and pro- and mesotibiae dark brown, metatibia white proximally with parallel rows of dark spicules. Tarsomeres dark brown. Hemelytra primarily dark brown with translucent to whitish transverse fascia on anterior margin of hemelytron occupying most of anterior margin of corium and ¼ width of clavus at approximately posterior ¾ of length of

claval suture, with dark brown posterior margin that traverses entirety of hemelytron (pl. 6). Lateral margins of corium posterior to transverse fascia weakly transparent, with area posterior to claval commissure and margins of cuneal fracture chocolate brown. Anterior half of cuneus white, posterior half dark brown to reddish brown. Membrane brown to pale brown with dark-brown colored veins. STRUCTURE: Eyes distinctly removed from vertex in anterior view. Antennal segment 2 1.5 times head width to nearly two times width. Cuneus at least half total length of membrane. Remaining characters as in generic description. GENITALIA (fig. 26E–H): Pygophore almost boxlike, with very small protrusion on ventroposterior surface. Secondary gonopore small, horse-collar shaped (fig. 26F). Right paramere convex laterally, widest medially (fig. 26E). Left paramere with posterior process relatively wide, directed dorsally (fig. 26G).

Female: Macropterous, medium sized, with nearly parallel lateral corial margins. Total length 2.62–2.72, width pronotum 0.75–0.76, maximum width across hemelytra 0.77–0.79. COLORATION: Same pattern as in male with following exception: female with antennal segment 2 paler basally than male in some specimens (pl. 6). STRUCTURE: Antennal segment 2 1.66 times total head width. Width vertex nearly two times width of one eye. Abdomen tapering anteriorly along proximal third of ventral surface. Remaining characters as in generic description.

HOSTS: Mostly Myrtaceae, although also found on Fabaceae, Thymelaeaceae, Goodeniaceae, and Lauraceae.

DISTRIBUTION: Throughout Australia.

DISCUSSION: The location of the holotype of this species is currently unknown, though it was originally listed as being in Hungary. Therefore, we based our concept of *L. quadrimaculata* on the original description and illustration and the collecting locality of the type relative to the other specimens we have examined. There is no other species of *Leucophoroptera* (or Leucophoropterini) that has the nearly parallel-sided hemelytra found in *L. quadrimaculata* females, the nearly triangular head, and the distinctive hemelytron patterning with the anterior portion of the clavus completely white. Associated males are diagnosed for the first time. Two species of *Blesingia* are herein synonymized with *L. quadrimaculata*: *Blesingia elegans* is based on a teneral specimen of *L. quadrimaculata*, and the holotype of *B. latezonata* is identical to *L. quadrimaculata* females. *Leucophoroptera nitidior* is nearly identical to *L. quadrimaculata* females with exception of the paler colored basal area antennal segment 2, which is also found in some females of *L. quadrimaculata*; therefore; this species is also here synonymized with *L. quadrimaculata.*

HOLOTYPE: AUSTRALIA: New South Wales: Sydney. 4.XI. 1900. Biró. 1 ♀ (Mus. Hung. Et. Helsingf.) [not examined].

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** 7 km S of Mt. Kaputar, 30.281°S 150.167°E, 24 Oct 1995, Schuh and Cassis, *Pimelea glauca* R. Br. (Thymelaeaceae), det. D.C. Godden 1996 NSW 395662, 1♀ (00393267) (AM). Botany Bay, 34.01657°S 151.22799°E, 35 m, 1900, H. Petersen, 5♀ (00271739, 00301021, 00374124, 00374126–00374127) (USNM). Cronulla, 34.05197°S 151.15366°E, 23 m, Dec 1924, H. Petersen, 4♀ (00301022–00301025) (USNM). Neilson Park, 28.8239°S 153.29447°E, 12 m, 1900, K.K. Spence, 1♂ (00168821) (ANIC). Rotary L/out Pigeon House Ra NW of Milton, 35.265°S 150.351°E, 22 Feb 1979, Z. Liepa, 1♀ (00393679) (AM). **Queensland:** Maleny, 26.767°S 152.85°E, May 1936, Unknown, 1♂ (00393650) (AM). **Tasmania:** 0.5 km SE of Couta Rocks: "Murphy's Spring," terminus of C214, Mick Murphy's House, 41.18012°S 144.68716°E, 8 m, 24 Jan 2004, M.D. Schwartz and P.P. Tinerella, *Melaleuca ericifolia* Sm. (Myrtaceae), det. Field ID, 4♂ (00108535, 00108540, 00272035–00272036), 7♀ (00272092, 00272094–00272099) (AMNH). **Victoria:** 5 km E of Cann River, Reedy Creek, 37.5681°S 149.2036°E, 70 m, 19 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Dillwynia glaberrima* Sm. (Fabaceae), det. NSW staff NSW658195, 1♀ (00272031) (AMNH). Wannon R. near Jimmy's Creek, Grampians, 37.37206°S 142.51336°E, 333 m, 10 Dec 1977, D.K. McAlpine and M.A. Schneider, 1♂ (00393652) (AM). **Western Australia:** 0.5 km N of Fisheries Road on Balladonia Road, 33.73981°S 123.0921°E, 120 m, 25 Nov 1999, R.T. Schuh and G. Cassis, *Verticordia brownii* (Desf.)DC. (Myrtaceae), det. PERTH

staff PERTH 05670292, 2♂ (00393268, 00393269) (AM). 1.1 km E of Cape Arid National Park boundary, 33.75268°S 123.2588°E, 150 m, 25 Nov 1999, R.T. Schuh and G. Cassis, *Verticordia brownii* (Desf.)DC. (Myrtaceae), det. PERTH staff PERTH 05670292, 1♀ (00393266) (AM). 2.1 km S of Coorow-Greenhead Rd, on Cockleshell Gully Rd, 30.08751°S 115.12°E, 156 m, 06 Nov 2004, Cassis, Weirauch, Tatarnic, Symonds, *Lechenaultia floribunda* Benth. (Goodeniaceae), det. PERTH staff PERTH6987486, 1♀ (00108536) (AMNH). 3.5 km N of Mt. Chudalup, D'Entrecasteaux National Park, 34.73335°S 116.0889°E, 50 m, 15 Dec 1997, Schuh, Cassis, Brailovsky, Asquith, 1♀ (00393262) (AM). 17 km N of Albany, Simpson Road at Chester Pass Hiway, 34.89933°S 117.9148°E, 170 m, 30 Nov 1999, R.T. Schuh and G. Cassis, *Pericalymma ellipticum ellipticum* (Endl.)Schauer (Myrtaceae), det. PERTH staff PERTH 05671868, 1♀ (00393265) (AM). Cosy Corner Beach East, Torbay Sound, W of Albany, 35.06033°S 117.6446°E, 2 m, 01 Dec 1999, R.T. Schuh, G. Cassis, & R. Silveira, 1♀ (00274749) *Pimelea rosea* R.Br. (Thymelaeaceae), det. PERTH staff PERTH 05671353, 1♀ (00393264) (AM). Hellfire Bay, Cape Le Grande National Park, 34.00398°S 122.1696°E, 30 m, 24 Nov 1999, R.T. Schuh and G. Cassis, 1♂ (00274758) (AM). Leeuwin Naturaliste National Park, Canal Rocks, 33.66513°S 115.0165°E, 50 m, 15 Dec 1997, Schuh, Cassis, Brailovsky, Asquith, *Cassytha racemosa forma racemosa* Nees (Lauraceae), det. PERTH staff PERTH 05056322, 1♀ (00393263) (AM). Rossiter Bay, Cape Le Grande National Park, 33.96726°S 122.2674°E, 3 m, 23 Nov 1999, R.T. Schuh, G. Cassis, & R. Silveira, 1♂ (00274756) *Pimelea ferruginea* Labill. (Thymelaeaceae), det. PERTH staff PERTH 05672341, 1♂ (00393260) *Darwinia vestita* (Endl.)Benth. (Myrtaceae), det. PERTH staff PERTH 05671698, 1♀ (00274754) (AM). Shannon River, 1 km N of Chesapeak Road, 34.83782°S 116.3755°E, 20 m, 03 Dec 1999, R.T. Schuh and G. Cassis, *Mirbelia dilatata* R.Br. (Papilionaceae), det. PERTH staff PERTH 05670810, 1♂ (00274133), 1♀ (00274134) (AM). Yalgorup National Park, 32.845°S 115.66138°E, 27 Nov 1998, G. Cassis, *Olearia axillaris* (DC.) Benth. (Asteraceae), det. PERTH staff PERTH 05227461, 2♀ (00393270, 00393271) (AM). ca 13 km E of Denmark on South Coast Hiway, 34.99397°S 117.5086°E, 80 m, 01 Dec 1999, R.T. Schuh and G. Cassis, *Beaufortia sparsa* R.Br. (Myrtaceae), det. PERTH staff PERTH 05671949, 1♂ (00393272), 5♀ (00393273–00393277) (AM), *Melaleuca ericifolia* Sm. (Myrtaceae), det. Field ID, 1♂ (00273337) (AMNH). nr. Pemberton, 24.44463°S 116.0349°E, 128 m, 26 Jan 1966, J.A. Grant, 1♀ (00321199) (BMNH).

Missanos, new genus
Figure 27; plate 6

TYPE SPECIES: *Missanos gulafuscos*, new species.

DIAGNOSIS: Recognized by wide and flat head with dense dark brown setae on gula and ventral surface of head; pronotum forming bell shape, anterolateral margins narrowed, posterior lobe of pronotum swollen dorsally and weakly demarcated from anterior lobe in lateral view; short antennal segment 2 shorter than width of head and covered with long, erect golden setae; flat and medially constricted punctate hemelytron, posterolateral margins of hemelytron thickened into a lobelike swelling over cuneal fracture (pl. 6); and petiolate abdomen.

DESCRIPTION: *Male*: Macropterous, small, weakly medially constricted. Total length 2.62, width pronotum 0.75–0.76, maximum width across hemelytra 0.69. COLORATION: Brown, pale brown and castaneous. **Head:** Castaneous. Eyes deep red to silver. Labium pale brown with distal darkening. All antennal segments brown. **Thorax:** Pronotum, scutellum, and thorax dark brown, anterior margin of pronotum sometimes castaneous. Dorsolateral margin of metepisternum and scent gland unicolorous with thoracic pleuron. *Legs:* Pro- and mesocoxae pale brown to castaneous, metacoxa dark basally for half of length and pale distally for remainder of length. All femora dark brown with paler brown ventrally, especially metafemur. All tibiae basally dark brown, distally golden, metatibia with parallel rows of dark spicules along entire length. Basal tarsomeres golden, distally dark brown. *Hemelytra:*

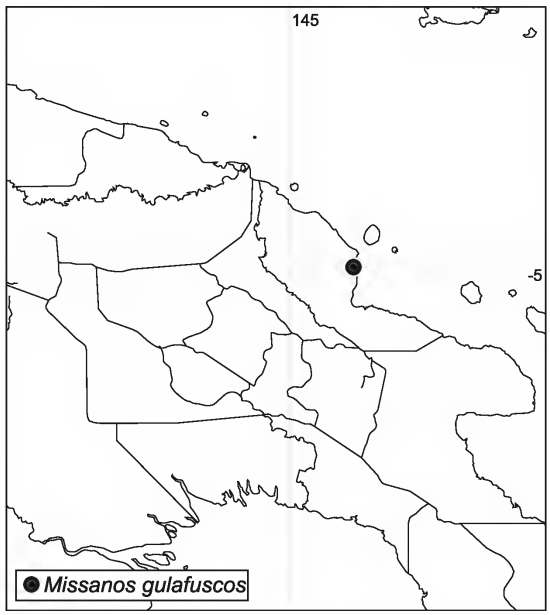

Figure 27. Distribution of *Missanos gulafuscos* (northeastern Papua New Guinea).

Primarily castaneous to dark brown with anterior portion of corium castaneous to golden brown; clavus castaneous with medial area darker brown, transparent areas on posterolateral margins adjacent to apex of clavus with dark posterior margin transversing entirety of hemelytron; white patch along medial margin of corium posterior to clavus and anterior to membrane with dark brown margin; apex of lateral corial margin anterior to cuneus with thin dark brown margin, medially golden brown (pl. 6). Anterolateral margin of cuneus white for nearly ¼ total area of cuneus, posterior dark brown. Membrane pale brown; veins lacking pigmentation. **Abdomen:** Sternite 1 yellowish with dark posterior margin, sternite 2 white to transparent, remaining segments dark brown. SURFACE AND VESTITURE: Dorsal surface of body and eyes covered with long, erect pale brown setae. Head, pronotum, and scutellum distinctly shiny. Hemelytron punctate, with long, erect, pale-brown setae and long, erect, evenly distributed black setae. Gena, gula and ventral surface of head with long, dense black setae. Reflective patches present on clavus and cuneus. STRUCTURE: **Head:** Wide, flat, lateral margins including eyes obscuring anterior margin of pronotum in lateral view. Clypeus flush with frons, not visible in dorsal view. Vertex convex, posterior margin shelflike, width less than ⅓ width of one eye. Dorsal margin of eyes protruding dorsad of vertex, giving head heartlike appearance in anterior view, total height of eyes nearly equal to total height of head. Antennal segment 1 inverted-coke-bottle shaped, surpassing apex of head; segment 2 short and narrower in diameter than antennal segment 1, increasing in diameter on distal one-fifth; length of antennal segment 2 less than total head width; antennal segments 3 and 4 nearly equal in diameter to segment 2, less than half length of segment 2. Labial segment 1 not quite attaining posterior margin of head, apex of labium surpassing apex of procoxa. **Thorax:** Pronotum 1.33 times wider than long, anterolateral margins narrowed compared to posterior lateral margins forming bell-shaped pronotum in dorsal view, posterior lobe swollen and appearing strongly convex in lateral view. Narrow, flat pronotal collar present. Mesoscutum hidden by posterior margin of pronotum, scutellum swollen anterior to posterior margin of pronotum. Scent gland approximately ¼ total area of metepimeron. *Legs:* Moderate length, slender, with metafemur of greatest diameter subapically and appearing kneelike. Claws of moderate length and width, pulvilli small, less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Dorsally flat; lateral margins weakly medially constricted, swollen anterior to cuneal fracture, forming lobelike process. Cuneus triangular, medial margin weakly convex, length greater than ⅓ length of hemelytral membrane, lateral margin weakly swollen in area occupied by white pigmentation; cuneal fracture angled anteromesially, **Abdomen:** Narrow anteriorly, widening posteriorly, petiolate. Abdominal sternite 1 longer than wide. **Pygophore:** Small with spinelike process on dorsal-posterior margin, occupying about one-fifth total length of abdomen, ventral margin weakly sloping upward toward apex. GENITALIA: Not examined.

Female: Brachypterous, small, weakly medially constricted. Total length 2.47, width pronotum 0.69, maximum width across hemelytra 0.74. COLORATION: Similar patterning

as in male. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: **Head:** Wider than in male, vertex convex, 1.5 times as wide as one eye. Antennal segment 2 as in male, length less than total head width. **Thorax:** Pronotum 1.33 times wider than long, lateral margins weakly medially constricted and narrowed to anterior margin, roughly bell shaped in dorsal view. Mesoscutum and anterior margin of scutellum hidden by posterior margin of pronotum, scutellum weakly transversely rounded. *Hemelytra:* Apex of hemelytra not quite attaining apex of abdomen, lateral margins weakly medially constricted. Cuneus shorter than in male. **Abdomen:** Petiolate, anterior half sharply declining ventrally in lateral view and constricted relative to posterior half in dorsal view, posterior half of abdomen sloping dorsally. Presence of ovipositor spine could not be observed because specimen glued on card. GENITALIA: Not examined.

ETYMOLOGY: Named after the collector of most of the Papuan New Guinea samples used in this study, Oliver Missa; masculine.

HOSTS: Unknown. Canopy fogging and light traps.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: This genus is closely related to *Waterhouseana* based on the nearly identical hemelytron and body coloration, the presence of wide and flat head whose posterolateral margins (including the eyes) wrap around the anterior margins of the pronotum to form shieldlike appearance dorsally, the presence of dense setae on the gula and gena, and the petiolate abdomen. *Missanos* is unique, however, in lacking the medially constricted pronotum distinctive of *Waterhouseana* and possesses very short, slender antennae with dense erect golden setae. We were not able to dissect the genitalia due to the fragility of the specimens when removed from the card mounts.

Missanos gulafuscos, new species
Figure 27; plate 6

Diagnosis: See generic diagnosis.

DESCRIPTION: See generic description.

ETYMOLOGY: Named for the long, dark brownish-gray setae on the gula and ventral surface of the head.

HOSTS: Unknown; collected in light traps and by canopy fogging.

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 11 Jun 1996, O. Missa, Light Trap, 1♂ (00302042) (ISNB).

PARATYPES: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 27 Jun 1995, O. Missa, 1♀ (00302043) (ISNB); 10 Jun 1996, O. Missa, Light Trap, 1♂ (00302040) (ISNB); 11 Jun 1996, O. Missa, 1♂ (00302041) (ISNB).

Neaitkenia, new genus
Figure 28; plate 7

TYPE SPECIES: *Aitkenia monteithi* Carvalho and Gross, 1982.

DIAGNOSIS: Recognized by dark brown to castaneous coloration (pl. 7), weakly medially constricted lateral margins of hemelytra, dark, elongate, and narrow metafemur; presence of only simple setae and reflective patches on dorsum, vertex narrower than width of one eye, at least ⅓ of total height of head below eyes, presence of row of fringelike setae on metafemora, and completely white to transparent transverse fascia.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.92–2.99, width pronotum 0.89–1.00, maximum width across hemelytra 0.94–1.00. COLORATION: Mostly brown with transparent to whitish transverse fascia. **Head:** Brown. Eyes silver to dark purple. Labium brown. Antennal segment 1 golden, segment 2 completely dark brown, segment 3 dark brown or white basally, dark distally, segment 4 with basal lightening and darkening distally or dark brown. **Thorax:** Pronotum, scutellum, and thorax dark brown to dark castaneous. Dorsolateral margin of metepisternum and scent gland with relatively narrow white band, width equal to about ¼ total width of scent gland. *Legs:* Procoxa brown to white, mesocoxa brown, metacoxa brown basally and white apically. Profemur brown or brown basally, pale distally, meso- and metafemora brown. Pro- and mesotibiae basally dark brown, distally golden, metatibia white proximally and brown for majority of remaining surface, with parallel rows of dark spicules.

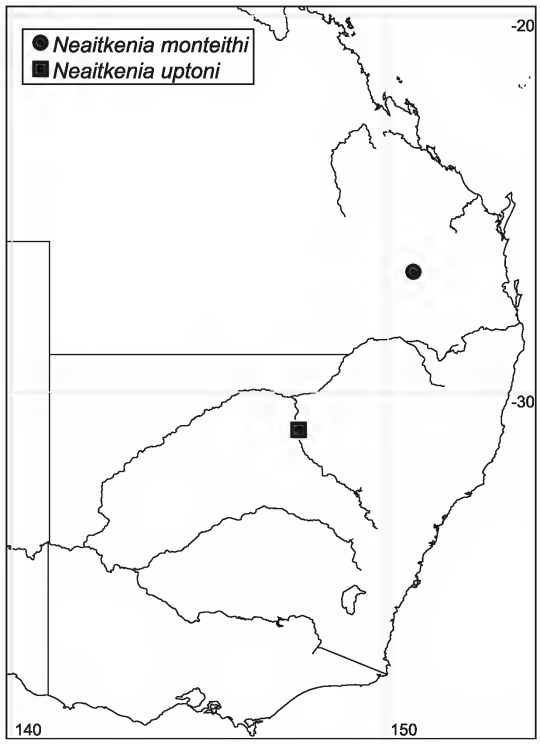

Figure 28. Distribution of *Neaitkenia* spp.

Tarsomeres dark brown. *Hemelytra:* Primarily brown with translucent to whitish transverse fascia on anterior margin of hemelytron occupying most of anterior margin of corium and part of medial area of clavus, with dark brown posterior margin transversing entirety of hemelytron (pl. 7). Remainder of corium pale brown, with area anterior to cuneal fracture more reddish dark brown or with transparent area posterior to dark brown posterior margin of transverse fascia. Anterior margin of cuneus white with yellowish tinge at lateral margin, occupying less than one-fifth total area of cuneus, posterior reddish brown. Membrane pale brown with brown veins. **Abdomen:** Brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with fine, golden simple setae, medial portion of hemelytron and medial area of claval suture with reflective patches. STRUCTURE: **Head:** Clypeus visible and surpassing anterior margin of frons in dorsal view or obscured by anterior margin of frons. Vertex convex and declining along posterior margin, width less than width of eye. Head height greater than 1.5 times total height of eye, vertex obscured in lateral view by anterior surface of eyes. Posterior margin of eyes partially obscures anterior margin of pronotum, pronotal collar absent. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head, segment 2 long and of equal or greater diameter than segment 1, increasing in diameter distally segment 3. Length of antennal segment 2 equal to ~1.30 times head width. Antennal segments 3 and 4 slender and less than half length of segment 2. Labial segment 1 reaching to about posterior margin of head, apex of labium reaching apex of mesocoxa. **Thorax:** Pronotum more than two times as wide as long, no demarcation between anterior and posterior lobes laterally or dorsally, dorsal surface nearly flat, lateral margins straight forming trapezoidal appearance in dorsal view. Mesoscutum exposed, scutellum weakly transversely rounded. Scent gland approximately ⅓ total area of metepimeron. *Legs:* Moderate length, slender with metafemur weakly flattened. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins nearly parallel sided to weakly medially constricted, dorsally transversely rounded. Cuneus triangular, length approximately equal to ⅓ total length of hemelytral membrane or longer, cuneal fracture angled anteromesially. **Abdomen:** Narrow, elongate, with genital capsule less than 1/3 total length. GENITALIA: See discussion.

Female: Unknown.

ETYMOLOGY: From the Latin *neo* for "new" and *Aitkenia* from the genus of original placement of the type species; feminine.

HOSTS: Unknown.

DISTRIBUTION: New South Wales and Queensland.

DISCUSSION: *Aitkenia* was found to be polyphyletic based on a phylogenetic analysis of the tribe (Menard and Woolley, in press), and the species *A. monteithi* and *A. uptoni* were found to not be in a monophyletic lineage with type species *Aitkenia latevagans.* Both *A. monteithi* and *A. uptoni* differ from *A. latevagans* in the shape of the metafemur, coloration, and the structure of the head; they

are here placed in the new genus *Neaitkenia*. The male genitalia of this genus are not described, however, for the following reasons. First, because the abdomen of *N. uptoni* is missing from the type specimen and the specimen examined, and the male genitalia illustrated for that taxon may not be conspecific (see also *N. uptoni* discussion). Second, *N. monteithi* is known only from the type and paratype, and the type was only able to be visually examined, but was not dissected due to its fragility; therefore, we are taking the conservative approach in referring to the original illustrations of the genitalia of *N. monteithi* for that species alone rather than for the genus as a whole.

Neaitkenia monteithi (Carvalho and Gross), new combination
Figure 28; plate 7

Aitkenia monteithi Carvalho and Gross, 1982: 42. figs. 63–65, 119 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Recognized by pro- and mesofemora basally dark, paler distally, transparent area posterior to dark posterior margin of transverse fascia (pl. 7), completely dark brown antennal segments, and relatively small cuneus with lateral margin inset relative to lateral margin of corium.

REDESCRIPTION: *Male:* Macropterous, small, medially constricted. Total length 2.99, width pronotum 1.00, maximum width across hemelytra 1.00 (based on original description). COLORATION: Brown with white areas on anterior of corium and anterior margin of cuneus. **Head:** Brown. Eyes deep red to purple. Antennal segment 1 and segment 2 brown, segment 3 white basally dark distally, and segment 4 pale basally and darkening distally. Procoxa light, mesocoxa brown, metacoxa white proximally, dark distally. Profemur proximally, paler distally, meso- and metafemur dark brown. Hemelytron brown with transparent to whitish transverse fascia on anterior margin occupying all of corium and most of medial area of clavus, with dark brown posterior margin that transverses across entirety of hemelytron, anterior to transparent to whitish band across medial area of hemelytron (pl. 7). Anterior margin of cuneus narrowly white, occupying less than one-fifth total area of cuneus, posterior portion brown. STRUCTURE: Clypeus not visible in dorsal view, frons relatively rounded. Eye height greater than half total height of head, weakly removed from surface of vertex. Apex of labial segment 1 not exceeding posterior margin of head, apex of labium reaching apex of mesocoxa. Lateral margins of hemelytra weakly constricted medially, dorsally transversely rounded. Cuneus triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially, and inset relative to lateral margin of corium. GENITALIA: Not examined, see original description.

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: Queensland.

DISCUSSION: The redescription of this species is based on examination of the holotype and the original description.

Holotype: **AUSTRALIA: Queensland**: Pat Creek, 11 km N of Archer Crossing via Coen, 28–29.vi.1975, G.B. Monteith. 1 ♂ (QU).

Neaitkenia uptoni (Carvalho and Gross), new combination
Figure 28; plate 7

Aitkenia uptoni Carvalho and Gross, 1982: 43, figs. 66–69, 118B (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Recognized by dark castaneous coloration (pl. 7), weakly medially constricted lateral margin of hemelytra, dark castaneous, elongate, and narrow metafemur, presence of only simple setae on dorsum, vertex less than width of one eye, at least ⅓ of total height of head below eyes, and completely white to transparent transverse hemelytral fascia.

DESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.86, width pronotum 0.91, maximum width across hemelytra 0.83 (from original description). COLORATION: Mostly dark castaneous with transparent to whitish transverse fascia. **Head:** Brown. Eyes silver. Antennal segment 1 golden, remaining segments dark brown. Dorsolateral margin of metepisternum and scent gland with relatively narrow white band, width equal to about ¼ total width of scent gland. Pro- and mesocoxa brown, metacoxa brown basally and white apically. Hemelytron primarily brown with

translucent to whitish transverse fascia on anterior margin occupying most of anterior margin of corium and part of medial area of clavus, with dark brown posterior margin that transverses entirety of hemelytron. Remainder of corium pale brown, with area anterior to cuneal fracture more reddish dark brown (pl. 7). Anterior margin of cuneus white with yellowish tinge on lateral margin, occupying less than one-fifth total area of cuneus, remainder of cuneus reddish brown. STRUCTURE: **Head:** Clypeus visible and surpassing anterior margin of frons in dorsal view. Vertex convex and declining along posterior margin, width less than width of eye. Eye height equal to ⅔ total height of head, vertex obscured in lateral view by anterior surface of eyes. Labial segment 1 surpassing posterior margin of head. Lateral margins of hemelytra nearly parallel sided. Cuneus triangular, length approximately equal to ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. GENITALIA: Abdomen and pygophore missing from all examined specimens; see discussion.

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: New South Wales and Queensland (Carvalho and Gross, 1982).

DISCUSSION: Carvalho and Gross (1982) described the external morphology of the holotype from New South Wales, but illustrated the male genitalia of a paratype specimen from Queensland because the type and the other specimen from New South Wales were missing the abdomen. The authors noted significant differences in the dimensions of specimens from the two populations, which suggest they may not be conspecific. We were unable to examine the paratypes from Queensland to verify whether they are the same taxon, and therefore redescribe the species based on the external morphology of the topotypic paratype. We do not redescribe the male genitalia.

HOLOTYPE: **AUSTRALIA: New South Wales:** 5 miles N.W. of Coffs Harb., 244 m, 01 Nov 1955, M.S. Upton, 1♂ (ANIC).

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** 5 miles N.W. of Coffs Harb., 244 m, 01 Nov 1955, M.S. Upton, 1♂ (00168820) (ANIC).

Neoleucophoroptera, new genus
Figure 29

TYPE SPECIES: *Leucophoroptera solomonensis* Schuh, 1984.

DIAGNOSIS: Recognized by lack of a pronotal collar, castaneous to golden coloration, nearly parallel-sided lateral margins of hemelytron, completely smooth and inpunctate hemelytron, lateral margin of corium anterior to cuneal fracture swollen and forming a lobelike process, lack of a complete transverse fascia, white anterior margin of cuneus widest at lateral margins and with remainder of cuneus dark brown and darker than majority of hemelytron, nearly straight lateral margins of pronotum that form a trapezoidal pronotum in dorsal view, width of vertex approximately equal to width of one eye, relatively short head with less than one-fifth of total area of head below eyes, laterally elongate metafemur rounded in cross section, and form of male genitalia.

REDESCRIPTION: *Male*: Macropterous, small, lateral margins weakly convex. Total length 1.51–1.60, width pronotum 0.60–0.69, maximum width across hemelytra 0.61–0.70. COLORATION: Castaneous to golden orange, with medially tapering transparent transverse fascia and white anterior margin of cuneus. **Head:** Golden orange to castaneous. Eyes deep red to purple. Labium golden. Antennal segment 1 golden to yellow-white, segment 2 completely golden brown to proximal ⅔ golden brown distal ⅓ castaneous, segment 3 completely castaneous to proximal half golden, distal half castaneous, and segment 4 completely castaneous. **Thorax:** Pronotum, scutellum, and thoracic pleuron and venter golden orange to castaneous. *Legs:* Coxae golden orange to yellow-white. Profemora yellow-white to orange-yellow, mesofemora orange-yellow to yellow-white proximal ⅓ and castaneous distal ⅔, metafemora orange-yellow to castaneous. Protibia completely yellow-white to golden, mesotibia yellow-white distally, dark brown basally or orange-yellow, metatibia orange-yellow to completely castaneous. Metatibiae with parallel rows of dark spicules. Tarsomeres completely golden. *Hemelytra:* Orange-yellow to castaneous and reddish, corium and clavus at the level of apex of scutellum with a complete, medially tapering transparent transverse

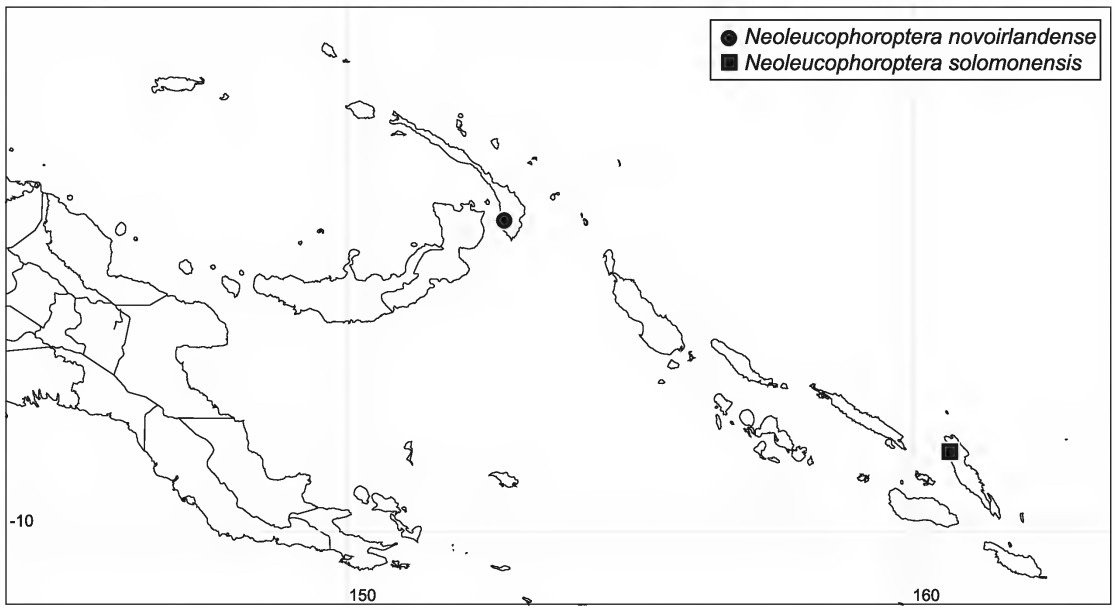

Figure 29. Distribution of *Neoleucophoroptera* spp.

fascia with dark posterior margin. Anterior margin of cuneus with white band along anterior margin of cuneus posterior to cuneal fracture, band narrowest adjacent to margin with membrane, taking up less than ⅓ total area coloration of cuneus, posterior of cuneus contrasting dark brown to reddish brown. Membrane castaneous to light brown, without vein pigmentation. **Abdomen:** Orange-yellow to castaneous. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with fine, brown simple setae. Reflective patches along lateromedial posterior margins of corium. STRUCTURE: **Head:** Frons convex, clypeus flat to weakly projecting. Height head approximately equal to width. Vertex convex, declining posteriorly, posterior margin elevated and finely carinate, width equidistant to width one eye. Eyes weakly removed from dorsal surface of vertex in anterior view, occupying greater than ⅔ total height of head to encompassing total height of head in lateral view, posterior margin of eyes partially obscuring anterior of pronotum. Apex labium just passing apex or midpoint of mesocoxae. Antennal segment 2 equal in length to 1.10 to 1.50 times head width. **Thorax:** Pronotum nearly twice as wide as long, with lateral margins weakly rounded and at a 60° angle relative to posterior margin of pronotum, forming a trapezoidal shape in dorsal view, dorsal surface weakly swollen in lateral view, distinctly rounded behind anterior margin, calli not visible, anterolateral angle with single dark, stout spine. Pronotal collar absent. Mesoscutum exposed, scutellum weakly transversely rounded. *Legs:* Long, metafemur 1.25 times longer than pro- and mesofemora, all femora narrow and weakly flattened. *Hemelytra*: Lateral margins weakly concave medially to nearly parallel sided, dorsally nearly flat. Cuneus triangular, approximately ½ total length of membrane, cuneal fracture weakly angled anteromesially. **Abdomen:** Nearly parallel sided with narrowing adjacent to attachment to thorax to weakly broadening adjacent to pygophore, pygophore ¼ total length of abdomen. GENITALIA: **Pygophore**: Tapering dorsally toward apex, unadorned. **Endosoma:** Unknown.

Female: Unknown.

ETYMOLOGY: From the Latin *neo* for new and *Leucophoroptera* for the genus of original placement of the type species; feminine.

HOSTS: Unknown; collected in light traps.

DISTRIBUTION: Papua New Guinea and the Solomon Islands.

DISCUSSION: *Neoleucophoroptera* is described to accommodate two species that were

placed in *Leucophoroptera* by Schuh (1984) (*L. novoirlandense* Schuh *and L. solomonensis* Schuh), which are not closely related to the type species *L. quadrimaculata*. Furthermore, these two species have several characters that separate them from *L. philippensis*, which is now placed in the new genus *Transleucophoroptera* based on the phylogenetic analysis of the tribe (Menard and Woolley, in press): the lack of punctation on the hemelytron, the nearly parallel-sided lateral margins of the pronotum, and the relatively short head with less than ⅓ of the area of the head below the eyes.

Neoleucophoroptera novoirlandense (Schuh), new combination
Figure 29

Leucophoroptera novoirlandense Schuh, 1984: 146, figs. 475, 478, 480–488, 491–495 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by golden coloration of corium and clavus, castaneous cuneus with a relatively narrow white anterior margin, complete transverse fascia with transparent patches most of lateral anterior margins of corium, eyes nearly equal to height of head and with anterior margins that obscure vertex in lateral view, and weakly swollen dorsal margin of pronotum.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: New Ireland Prov.**: SW New Ireland, ridge above Camp Bishop, 15 km up Kait River, 250–750 m, July 13, 1956, J.L. Gressitt. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: New Ireland Province:** Gilingil Pl'n, 2 m, 16 Jul 1956, J.L. Gressitt, paratype, 1♂ (00095328) (AMNH). Ridge above Camp Bishop, 15 km up Kait R., 4.48744°S 152.76638°E, 284 m, 10 Jul 1956, J.L. Gressitt, paratype, 1♂ (00318870) (BPBM); 13 Jul 1956, J.L. Gressitt, paratype, 1♀ (00318871) (BPBM).

Neoleucophoroptera solomonensis (Schuh), new combination
Figure 29

Leucophoroptera solomonensis Schuh, 1984: 149, figs. 476, 479, 490 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by overall castaneous coloration with posterior half of corium reddish, antennal segment 2 pale on proximal ⅔, relatively broad white anterior margin of cuneus, eyes occupying majority of height of head but not obscuring vertex in lateral view, obsolete gula, and relatively flat dorsal margin of pronotum.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Solomon Islands.

HOLOTYPE: **SOLOMON ISLANDS: NW Malaita**: Dala, June 19, 1964, malaise trap, R. Straatman. 1♂ (BPBM) [not examined].

Papuamimus Schuh
Figure 30

Papuamimus Schuh, 1984: 217 (n. gen., descr., disc.).

TYPE SPECIES: *Papuamimus irianicus* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by large eyes with anterior margin strongly removed from vertex, flattened pronotal collar, highly polished head, pronotum, and scutellum, narrow anterior margins of pronotum and wide posterior margins that form a bell shape in dorsal view, posterior lobe of pronotum swollen and in lateral view appearing convex and with a posterior margin that completely obscures mesoscutum, flat and punctate hemelytron strongly constricted medially, posterolateral transparent areas on corium, incomplete transverse fascia, dark posterior coloration of cuneus, posterolateral margins of hemelytron swollen to form a lobe anterior to cuneal fracture, petiolate abdomen, pygophore lacking a dorsal spinelike process, and male genitalic structure. Differentiated from *Arafuramiris* by lack of a patch of sericeous setae on clavus and endosomal structure.

Female: Similar to male, but smaller in size, hemelytron shorter, vertex wider, anterior margin of eyes continuous with angle of vertex, and antennal segment 2 shorter and more clublike.

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: *Papuamimus* is similar in overall shape, size and morphology to

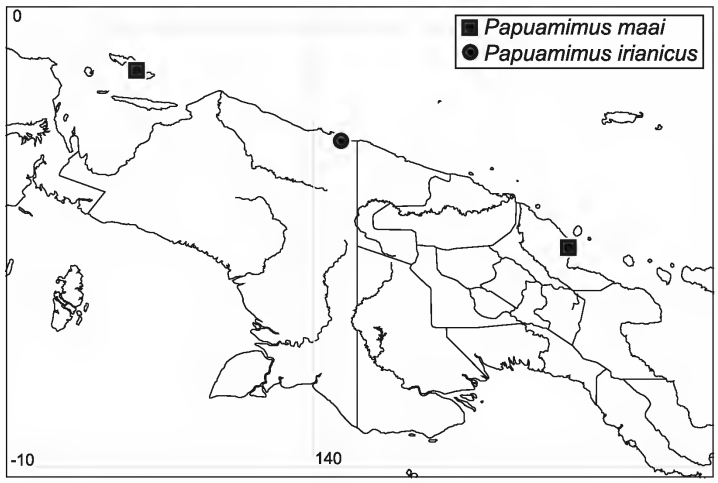

Figure 30. Distribution of *Papuamimus* spp.

Arafuramiris, but lacks the sericeous setae on the clavus and the posterior process of the endosoma terminates just past the anterior margin of the secondary gonopore, versus extending to near the apex of the anterior process, as in *Arafuramiris*.

Papuamimus irianicus Schuh
Figure 30

Papuamimus irianicus Schuh, 1984: 218, figs. 715, 716, 719–723 (n. sp., diag., descr., DV, figs. head-pronotum, MG).

DIAGNOSIS: Recognized by characters in generic diagnosis, completely castaneous coloration of antennal segment 2, segment 2 of similar diameter over entire length, strongly swollen posterior lobe of pronotum distinctly convex in lateral view and not clearly differentiated dorsally from anterior lobe, and anterolateral margin of hemelytron wider than at posterior margin.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown; collected by traps and canopy fogging.

DISTRIBUTION: New Guinea.

Holotype: **INDONESIA: West Irian:** Cyclops Mountains, Ifar, 300 m, June 21, 1959, T.C. Maa. 1♂ (BPBM) [not examined].

Specimens Examined: **INDONESIA: Irian Jaya:** Cyclops Mountains, Ifar, 2.6°S 140.61°E, 300 m, 21 Jun 1959, T.C. Maa, paratype, 1♂ (00321076) (BPBM). **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 09 Jun 1995, O. Missa, 1♂ (00302124) (ISNB); 10 Jun 1996, O. Missa, Light Trap, 1♂ (00302131) (ISNB).

Papuamimus maai Schuh
Figure 30

Papuamimus maai Schuh, 1984: 218, figs. 715, 716, 719–723 (n. sp., diag., descr., DV, figs. head-pronotum, MG).

DIAGNOSIS: Recognized by generic diagnosis, antennal segment 2 dark brown at extreme base and yellowish on distal two-fifths, antennal segment 2 narrower in diameter proximally than antennal segment 1, and swollen posterior lobe of pronotum weakly differentiated from anterior lobe in lateral view.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown, collected by traps and canopy fogging.

DISTRIBUTION: New Guinea.

Holotype: **INDONESIA: West Irian:** Biak Island, strand, June 24, 1959, T.C. Maa. 1♂ (BPBM) [not examined].

Specimens Examined: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 1995, O. Missa, 2♂ (00301961, 00301962) (ISNB); 02 May 1995, O. Missa, 1♂ (00301982) (ISNB); 05 May 1995, O. Missa, 3♀ (00301998–00302000) (ISNB); 10 May 1995, O. Missa, 1♂ (00301967), 3♀ (00196002,

00301991–00301992) (ISNB); 11 May 1995, O. Missa, 1♂ (00196387) (ISNB); 25 May 1995, O. Missa, 1♀ (00301994) (ISNB); 09 Jun 1995, O. Missa, 2♀ (00301996, 00301997) (ISNB); 14 Jun 1995, O. Missa, 3♂ (00301963–00301964, 00301969), 1♀ (00302001) (ISNB); 25 Jun 1995, O. Missa, 1♂ (00301979) (ISNB); 25 Jul 1995, O. Missa, 1♂ (00301981) (ISNB); 09 Apr 1996, O. Missa, Light Trap, 2♂ (00301968, 00301975) (ISNB); 17 Apr 1996, O. Missa, 3♂ (00301988–00301990) (ISNB); 01 May 1996, O. Missa, 1♂ (00301980) (ISNB); 15 May 1996, O. Missa, 2♂ (00301984, 00301985), 2♀ (00301993, 00302132) (ISNB); 04 Jun 1996, O. Missa, Light Trap, 1♂ (00301974) (ISNB); 05 Jun 1996, O. Missa, Light Trap, 3♂ (00301971–00301973) (ISNB); 06 Jun 1996, O. Missa, 1♂ (00301970) (ISNB); 07 Jun 1996, O. Missa, 1♂ (00301977) (ISNB); 18 Jun 1996, O. Missa, 1♂ (00301983), Light Trap, 1♂ (00302046) (ISNB); 23 Jun 1996, O. Missa, 1♂ (00301978) (ISNB); 27 Jun 1996, O. Missa, 1♂ (00301976) (ISNB); 09 Jul 1996, O. Missa, Light Trap, 2♂ (00301965, 00301966) (ISNB); 25 Jul 1996, O. Missa, 2♂ (00301986, 00301987, 00302068), 1♀ (00301995) (ISNB).

Papuamiroides, new genus
Figures 31–32; plate 7

TYPE SPECIES: *Papuamiroides elongatus*, new species.

DIAGNOSIS: Recognized by narrow and elongate antennal segment 2, shape of head, distinctly shiny head, thorax, pronotum, and scutellum, punctate and flat hemelytron with strongly constricted medial margin, patterning on hemelytron, and apex of endosoma in form of a spine.

DESCRIPTION: *Male*: Macropterous, large, medially constricted. Total length 2.77–2.82, width pronotum 0.71–0.75, maximum width across hemelytra 0.74–0.77. COLORATION: Brown, pale brown, and castaneous. **Head:** Castaneous. Eyes deep red to purple. Labium pale brown with distal darkening. Antennal segment 1 dorsally brown on distal half and golden for rest, segment 2 dark brown along margin with Antennal segment 1 and golden for over half of remaining length before transitioning to dark brown on distal ⅓, segment 3 completely golden, segment 4 dark brown. **Thorax:** Pronotum, scutellum, and

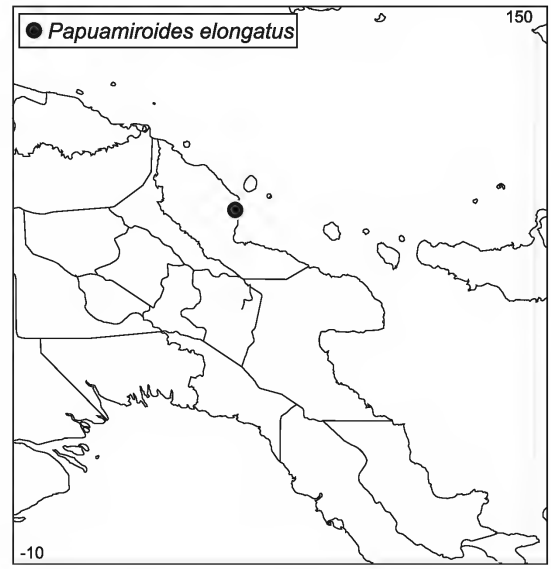

Figure 31. Distribution of *Papuamiroides elongatus.*

thorax castaneous, anterior margin of pronotum sometimes more golden. Dorsolateral margin of metepisternum and scent gland unicolorous with thoracic pleuron. *Legs:* Pro- and mesocoxae pale brown to castaneous, metacoxa dark basally for half of length and pale distally for remainder of length. All femora dark brown with paler brown ventrally, especially metafemur. All tibiae proximally dark brown, distally golden, metatibia with parallel rows of dark spicules along entire length. Basal tarsomeres golden, distally dark brown. *Hemelytra:* Primarily castaneous to dark brown with anterior of corium castaneous to golden brown, clavus castaneous with medial area darker brown, transparent areas on posterolateral margins adjacent to apex of clavus with dark posterior margin transversing entirety of hemelytron, white patch along medial margin of corium posterior to clavus and anterior hemelytral membrane surrounded with dark brown margin, lateral corial margin narrowly dark brown, medially golden brown (pl. 7). Anterolateral margin of cuneus white for nearly ¼ total area of cuneus, posterior dark brown. Membrane pale brown with veins lacking pigmentation. **Abdomen:** Sternite 1 yellowish with dark posterior margin, sternite 2 white to transparent,

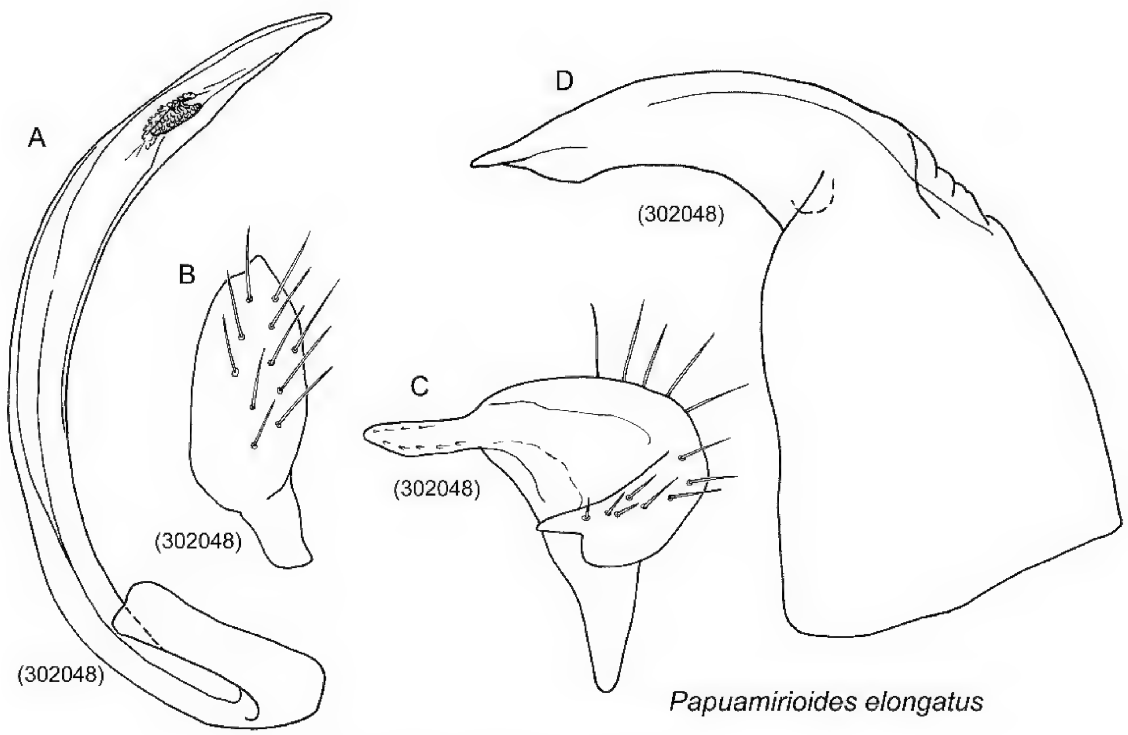

Figure 32. Male genitalia of *Papuamiroides elongatus* (A–D).

remaining segments dark brown. SURFACE AND VESTITURE: Dorsal surface of body and eyes covered with long, erect pale brown setae. Head, pronotum, and scutellum distinctly shiny. Hemelytron punctate, also with long, erect, evenly distributed black setae. Reflective patches on clavus and cuneus. STRUCTURE: **Head:** Wide and flat. Clypeus surpassing anterior margin of frons and barely visible in dorsal view. Vertex weakly convex, posterior margin shelflike, width nearly equal to width of one eye. Eye height greater than 1.5 total height of head, dorsal margins of eyes weakly removed from anterior margin of vertex, vertex visible in lateral view. Antennal segment 1 inverted-coke-bottle shaped, length surpassing apex of head; segment 2 narrower than segment 1, increasing in diameter distally, length segment 2 equal to 1.5 times head width, segments 3 and 4 slender and less than half length of segment 2. Labial segment 1 not quite attaining posterior margin of head, apex of labium reaching apex of mesocoxa. **Thorax:** Pronotum 1.25 times as wide as long, with narrow, weakly reflexed collar. Mesoscutum hidden by posterior margin of pronotum, anterior portion of scutellum swollen. Scent gland approximately ¼ total area of metepimeron. *Legs:* Moderate length, slender with metafemur weakly flattened. Claws of moderate length and width, pulvilli less than half of claw length. Parempodia parallel and setiform. *Hemelytra*: Lateral margins strongly medially constricted, dorsally flat. R+M vein terminating near midpoint of hemelytron. Cuneus triangular, lateral margin weakly swollen, occupied by white pigmentation, medial margin weakly convex, total length greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. **Abdomen:** Narrow anteriorly, widening posteriorly, petiolate. Abdominal sternite 1 longer than wide. GENITALIA (fig. 32): **Pygophore**: Small, less than ¼ total length of abdomen, lacking any spines or elaborations. **Endosoma:** Small, slender, twisted, S-shaped, composed of two sclerotized straps, fused into tube toward base and separating over most of length, unified by membrane,

and fusing at apex to form spinelike process. Secondary gonopore small, weakly sclerotized, located subapically (fig. 32A). **Phallotheca:** Moderately sized, L-shaped, apex gently tapering to a point, ventral surface expanded preapically (fig. 32D). **Right Paramere:** Moderately sized, nearly equal in size to left paramere, lateral margins nearly parallel, with tapering, pointed apex (fig. 32B). **Left Paramere:** Moderately sized; posterior process of medium width, with sensory pits, dorsal surface nearly straight, apex directed perpendicular to base of paramere, relatively elongate compared to anterior process, anterior process short, dorsal margin near median of total height of paramere. Body between anterior and posterior processes rounded (fig. 32C).

Female: Brachypterous, small, medially constricted. Total length 2.52–2.62, width pronotum 0.60–0.69, maximum width across hemelytra 0.69–0.74. COLORATION: Similar patterning as in male. SURFACE TEXTURE AND VESTITURE: As in male. STRUCTURE: Clypeus produced, exserted in dorsal view. Vertex convex, width greater than two times width of one eye. Eyes nearly half total height of head in lateral view, dorsal surface of eyes continuous with vertex. Length of antennal segment 2 nearly 1.33 times total head width. Pronotum weakly medially constricted in dorsal view, lateral margins of anterior lobe narrower than posterolateral margins. Apex of hemelytron not attaining apex of abdomen. **Abdomen:** Petiolate, anterior half sharply declining ventrally in lateral view and constricted relative to posterior half in dorsal view, posterior half sloping dorsally. Spine absent on ventral surface of ovipositor apex, ovipositor continuously linear. GENITALIA: Not examined.

ETYMOLOGY: Name for the similar appearance to *Papuamimus*; masculine.

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: *Papuamiroides* is similar to *Papuamimus* in overall appearance and morphology, however, the narrow and elongate antennal segment 2 and the form of the male genitalia separate the two genera. Furthermore, in the closely related genera *Arafuramiris, Missanos*, and *Waterhouseana,* the length of the antennal segment 2 is never more than 1.3 times greater than the width of the head whereas it is 1.5 times in *Papuamiroides.*

Papuamiroides elongatus, new species
Figures 31–32; plate 7

DIAGNOSIS: Recognized by the generic diagnosis.

DESCRIPTION: See generic description.

ETYMOLOGY: Named for the elongate antennal segment 2.

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: There is some variability in the width of the vertex relative to the total width of the head in both sexes of this species, but other aspects of external morphology, genitalia, and the presence of the long narrow antennae unite them as a single taxon.

HOLOTYPE: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 15 May 1996, O. Missa, 1♂ (00302049) (ISNB).

PARATYPES: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 17 Apr 1996, O. Missa, 3♀ (00302055, 00302063– 00302064) (ISNB); 15 May 1996, O. Missa, 3♂ (00302047– 00302048, 00302050), 7♀ (00302052– 00302054, 00302062, 00302065– 00302067) (ISNB); 18 Jun 1996, O. Missa, 1♀ (00302061) (ISNB).

Pseudohallodapocoris Schuh
Figure 33

Pseudohallodapocoris Schuh 1984: 230 (n. gen., diag., descr.).

TYPE SPECIES: *Pseudohallodapocoris ifar* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by large eyes exserted from anterior margin of pronotum, laterally flattened labrum, exserted clypeus anterior to anterior margin of frons and visible in dorsal view, declining posterior margin of vertex; broad, flattened pronotal collar, swelling of posterior lobe of pronotum relative to anterior lobe and appearing convex in lateral view, dorsal demarcation between anterior and posterior lobes, fringe of setae on metafemora, small cuneus that takes up less than ¼ total length of hemelytral membrane; spinelike process on ventral-posterior surface of pygophore, and shape of posterior process on left paramere.

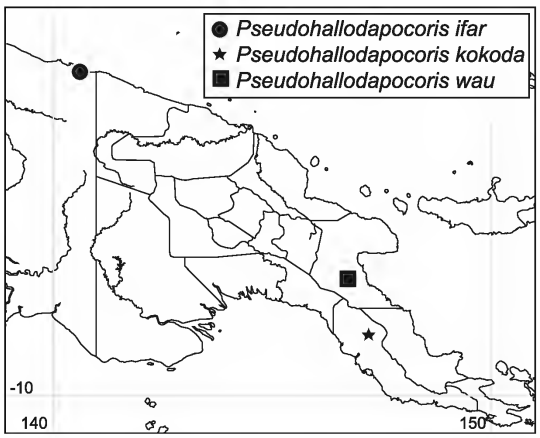

Figure 33. Distribution of *Pseudohallodapocoris* spp. (eastern Papua New Guinea).

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: This is the only genus with the eyes removed from the anterior margin of the pronotum, a broad collar, and the relatively short area below the eyes (less than ½ the total height of the head in lateral view). Only *Trichocephalocapsus* and *Gulacapsus* also have the eyes removed from the anterior margin of the pronotum and have a relatively broad pronotal collar, but the area below the eyes is much larger, more developed, and highly modified in *Pseudohallodapocoris*. The left paramere in *Pseudohallodapocoris* is also unique, the apex of the posterior process widening subapically before tapering into a point (Schuh, 1984: fig. 766), whereas in most Leucophoropterini the posterior process is of uniform width or evenly tapering to the apex. For additional discussion of this genus see Schuh (1984).

Pseudohallodapocoris ifar Schuh
Figure 33

Pseudohallodapocoris ifar Schuh, 1984: 233, figs. 761, 762, 765–767 (n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by cuneus with less than half of its anterior area posterior to cuneal fracture white, relatively narrow transverse fascia near middle of hemelytron rather than posterior to apex of scutellum, anterior lobe of pronotum weakly separated from posterior lobe, and shape of male genitalia.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Western New Guinea [Indonesia].

DISCUSSION: We did not reexamine the holotype of this species, but the original description and illustrations of the male genitalia clearly indicate it is unique.

HOLOTYPE: **INDONESIA: West Irian:** Cyclops Mountains, Ifar, 300 m, June 22, 1959, T.C. Maa. 1 ♂ (BPBM) [not examined].

Pseudohallodapocoris kokoda Schuh
Figure 33

Pseudohallodapocoris kokoda Schuh, 1984: 233, figs. 761, 763, 768, 769 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by incomplete transverse fascia on hemelytron, majority of anterior area of cuneus white, weakly removed anterior surface of eyes compared to vertex and vertex completely visible in lateral view, relatively weakly swollen posterior lobe of pronotum, and relatively short anterior lobe of pronotum.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: We did not reexamine the holotype of this species, but the relatively small eyes compared to the other species, the less pronounced differentiation between the anterior and posterior lobes of the pronotum, and the other characters in the diagnosis clearly indicate it is unique.

HOLOTYPE: **PAPUA NEW GUINEA: Northern Prov.:** Kokoda, 400 m, March 22, 1956, J.L. Gressit. 1 ♂ (BPBM) [not examined].

Pseudohallodapocoris wau Schuh
Figure 33

Pseudohallodapocoris wau Schuh, 1984: 234, figs. 761, 764, 770, 771 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by laterally flattened labrum, clear differentiation between anterior and posterior lobes of pronotum with a posterior lobe distinctly convex in lateral view, incomplete transverse fascia on hemelytron, and pale coloration of exocorium at level of apex of claval commissure.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: We did not reexamine the holotype of this species, but the strongly swollen and convex posterior lobe of the pronotum, shape of the head, coloration, and the other characters in the diagnosis clearly indicate it is unique.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Wau, 1250 m, April 12, 1965, malaise trap, J. Sedlacek. 1♂ (BPBM) [not examined].

Sejanus Distant
Figures 34–38; plate 7

Sejanus Distant, 1910: 20 (n. gen., syn. by Carvalho, 1952a: 66); Carvalho and Gross, 1982: 7 (descr., disc., key to Australian spp. and subspp.); Schuh, 1984: 150 (diag., descr., disc., key to Indo Pacific spp.); Kerzhner and Schuh, 1995: 5 (rev. syn.); Yasunaga, 2001: 121 (n. sp., diag., key to Japanese spp).

Idatius Distant, 1910: 20 (n. gen., junior homonym of *Idatius* Fairmaire, 1906, Coleoptera; syn. by Carvalho, 1952: 66).

Eosthenarus Poppius, 1915: 72 (n. gen., syn. by Kerzhner and Schuh, 1995: 5)

Idatiella China, 1926: 288 (n. name for Idatius Distant).

TYPE SPECIES: *Sejanus funereus* Distant, 1910, by original designation.

DIAGNOSIS: Recognized by small size, dark brown to rarely reddish coloration lacking punctation or maculation, lack of a complete transverse fascia if present at all, cuneus sometimes with two white spots on lateral margins, presence of only simple setae, relatively large eyes nearly or completely encompassing total height of head in lateral view, absence of a pronotal collar, relatively short, flattened metafemur, transversely rounded hemelytral margins, and relatively simple C- to J-shaped endosoma sometimes with a well-developed secondary gonopore.

REDESCRIPTION: *Male*: Macropterous, small, parallel sided. Total length 2.03–2.23, width pronotum 0.77–0.90, maximum width across hemelytra 0.94–0.99. COLORATION: Dark brown to rarely reddish. **Head:** Dark brown to blackish. Eyes deep red to purple, rarely silver. **Thorax:** Pronotum, scutellum, and thorax pleuron and venter dark brown. Dorsolateral margin of metepisternum and scent gland unicolorous with thoracic pleuron and lacking white pigmentation to possessing white band of varying width along dorsolateral margin. *Legs:* Femora dark brown or red basally and golden distally, completely golden or completely dark brown to red with metafemora usually unicolorous. All tibiae completely golden, dark brown basally and golden distally, or rarely completely dark brown. Metatibiae with parallel rows of dark spicules. Tarsomeres completely golden, basally dark brown and distally golden, or completely dark brown. *Hemelytra:* Completely brown or rarely reddish, sometimes with luteous markings adjacent to claval suture or on median of clavus. Anterior margin of cuneus with or without two lateral white spots that may or may not be partially fused or narrow white band along anterior margin of cuneus posterior to cuneal fracture, posterior of cuneus unicolorous with majority of hemelytron. **Abdomen:** Dark red or brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with fine, golden simple

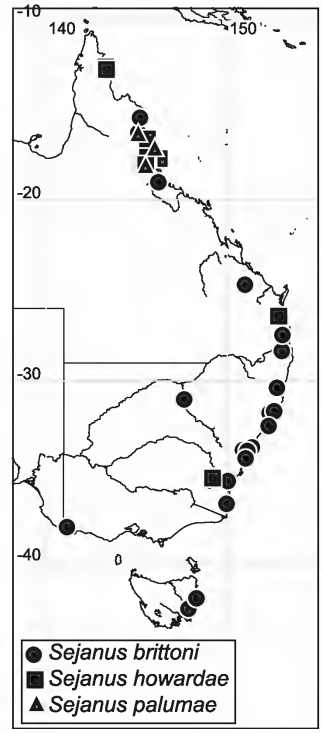

Figure 34. Distribution of *Sejanus* spp. in Australia.

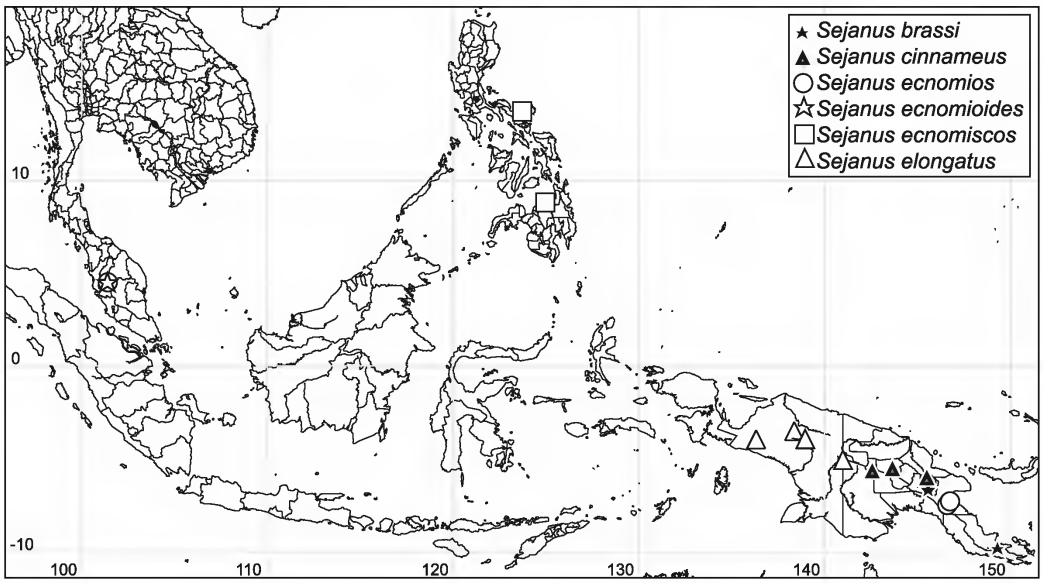

Figure 35. Distribution of *Sejanus* spp. in the Orient and New Guinea (B–E).

setae. Lacking reflective patches on hemelytral surface. STRUCTURE: **Head:** Frons convex, clypeus anterior to surface of frons and visible in dorsal view of head to obscured by frons and not visible in dorsal view. Vertex flat to weakly convex, posterior margin flat, wider than width of one eye. Eyes removed from dorsal surface of vertex in anterior view, occupying entire height of head in lateral view or with vertex visible anteriorly, posterior margin of eyes partially obscuring anterior of pronotum. Labium just passing apex of mesocoxae to extending past metacoxae. Antennal segment 2 equal in length to head width to over 1.20 times head width. **Thorax:** Pronotum more than two times as wide as long with lateral margins straight and angled nearly 45°, forming trapezoidal shape in dorsal view, dorsal surface flat and lacking demarcation between anterior and posterior lobes, calli not visible, anterolateral angle with single dark, stout

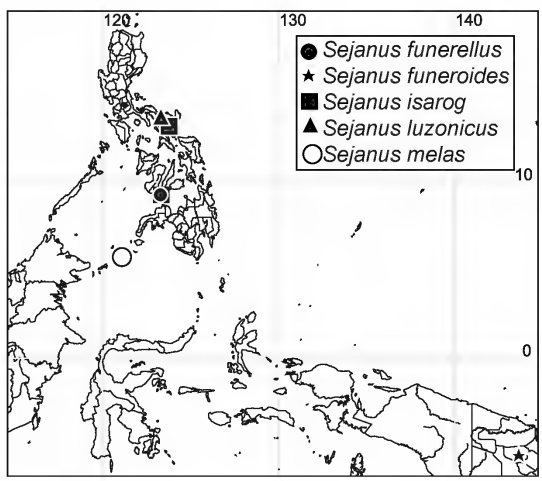

Figure 36. Distribution of *Sejanus* spp. in the Philippines and New Guinea (F–M).

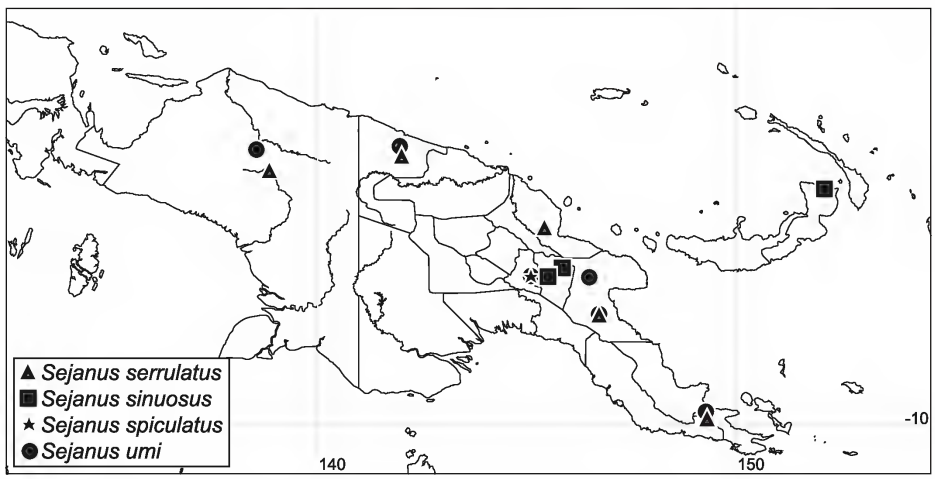

Figure 37. Distribution of *Sejanus* spp. in New Guinea (S–U).

spine. Mesoscutum exposed, scutellum weakly transversely rounded. *Legs:* Short, metafemur 1.25–1.33 times longer than pro- and mesofemora, all femora weakly flattened. *Hemelytra*: Lateral margins nearly parallel sided, dorsally transversely rounded. Cuneus triangular, relatively short, a less than ⅓ total length of membrane to rarely longer than ⅓ total length, cuneal fracture angled anteromesially. **Abdomen:** Parallel-sided, pygophore one-fifth to nearly ⅓ total length of abdomen. GENITALIA: **Pygophore**: Tapering dorsally toward apex, unadorned. **Endosoma:** C (fig. 38A, F) to J-shaped and weakly twisting (fig. 38I), flat, small, with weakly developed to well-developed and horse-collar–shaped secondary gonopore. Apex with spines or rarely serrated membrane (fig. 38A, F). Membrane surrounding endosoma smooth, with spicules, or sometimes with serrations extending over distal half of endosoma and sometimes just around apex (fig. 38A, F). **Phallotheca**: Surface smooth to rarely with ridges, C- to L-shaped, apex tapering to point without ornamentations (fig. 38D, H, K). **Right paramere**: Small, subequal in size to left paramere, parallel sided to wider medially with pointed apex (fig. 38B, E). **Left paramere:** Larger in size than right paramere (fig. 38C, G, J); posterior process elongate, narrow, with or without sensory pits, apex angled dorsally or ventrally, rarely curved medially with apex directed dorsally; anterior process short, stocky, apex rarely directed in alternate direction of posterior process (e.g., *S. ecnomios* Schuh [1984: fig. 545]), dorsal surface of anterior process ventral to or at midline of total height of paramere. Main body of paramere sometimes medially expanded (Schuh, 1984: figs. 545, 548).

Female: Macropterous, small, rounded with convex lateral margins. Total length 2.26–2.62, width pronotum 0.89–1.02, maximum width across hemelytra 1.08–1.19. COLORATION: Basal half antennal segment 2 sometimes more yellow than in male, overall coloration darker and more intense. SURFACE AND VESTITURE. As in male. STRUCTURE: Vertex wider relative to total head width than in male and lateral hemelytral margins more strongly convex. Remaining characters as in male. GENITALIA: Two separate, triangular-shaped vestibular sclerites, no visible lateral tube, but with an apical sclerite covering vulva between vestibular sclerites; sclerotized areas on lateral margins of first gonapophyses between dorsal and ventral labiate plates; sclerotized rings weakly sclerotized. Posterior wall mostly membranous, with posterior margin sclerotized and possessing medial invagination; lateral region of interramal sclerites sclerotized.

HOSTS: Mostly unknown, but the Australian species are recorded primarily on Myrtaceae and Casuarinaceae.

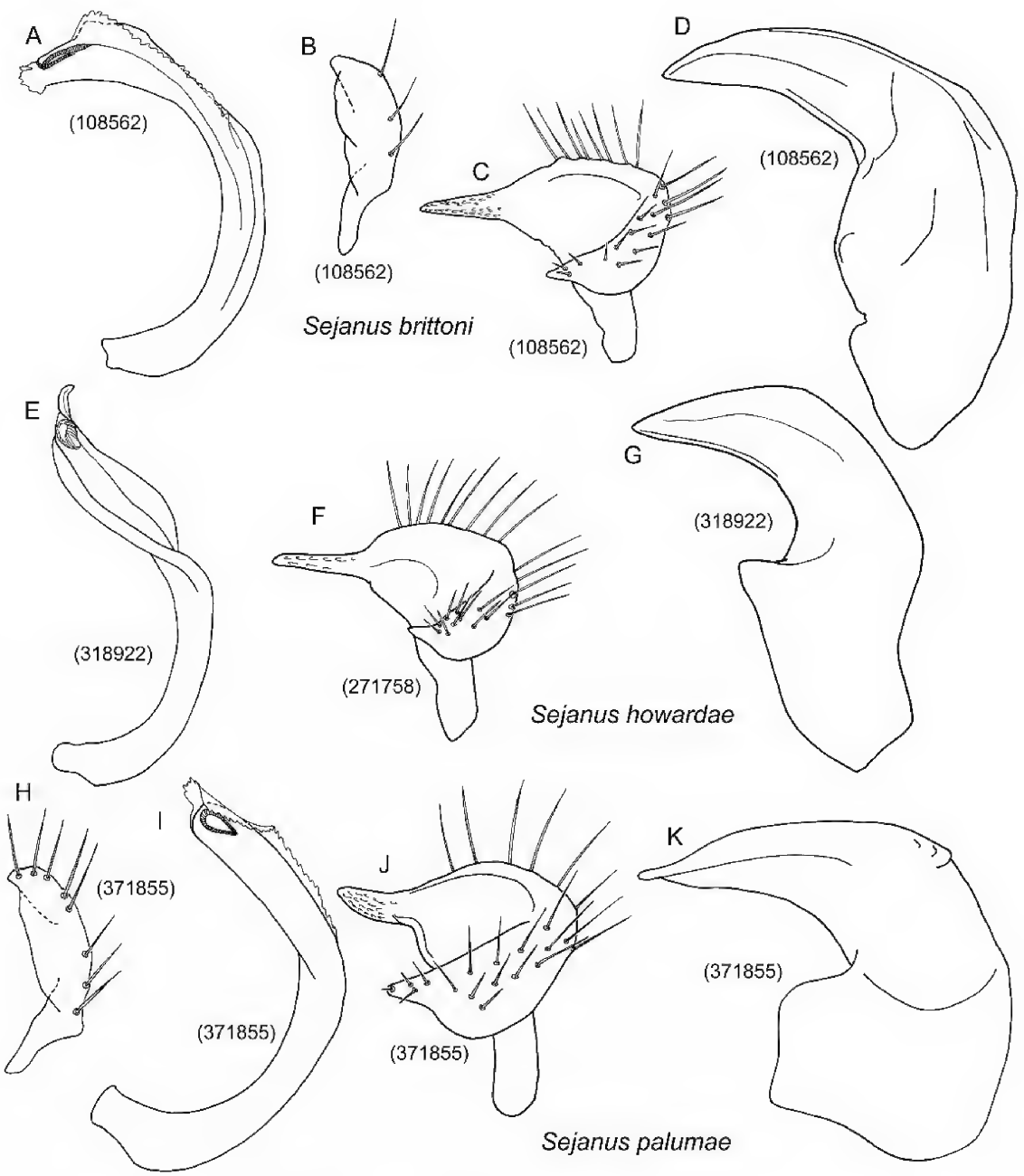

Figure 38. Male genitalia of *Sejanus* spp. **A–D.** *S. brittoni*. **A.** Endosoma, **B.** Right paramere, **C.** Left paramere, **D.** Phallotheca. **E–G.** *S. howardae*. **E.** Endosoma, **F.** Left paramere, **G.** Phallotheca. **H–K.** *S. palumae*. **H.** Right paramere, **I.** Endosoma, **J.** Left paramere, **K.** Phallotheca.

DISTRIBUTION: Oriental Region, Palearctic Region, Indo-Pacific, and Australia.

DISCUSSION: *Sejanus* remains one of the largest genera of Leucophoropterini and also the most widely distributed, with species as far west as India and Sri Lanka, as far east as New Caledonia, as far north as Japan and Russia, and as far south as Australia. *Sejanus* is unique with the apical morphology of the endosoma having spines,

serrated membrane, or other elaborations, whereas most genera of Leucophoropterini have a simple S-shaped endosoma with a weakly sclerotized apical secondary gonopore and no other modifications. Schuh (1984) noted that *Sejanus* is superficially similar to *Campylomma,* but lacks the spines on the metafemur, the bladelike apical process on the endosoma, and has a different coloration on the cuneus. *Sejanus* also has a primarily black femora and tibiae, whereas most *Campylomma* species have pale femora with black spots.

Sejanus amami Yasunaga

Sejanus amami Yasunaga, 2001: 124, figs. 4, 10 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Recognized by primarily dark brown coloration with a thin white band on cuneus along cuneal fracture, completely golden antennal segment 1, and golden-brown coloration of basal ⅓ of segment 2.

DESCRIPTION: See Yasunaga (2001).

HOSTS: Unknown.

DISTRIBUTION: Japan (Amami-Oshima Is.).

DISCUSSION: We were unable to examine specimens of this species, but based on the original description, habitus images of the male, and the illustrations provided by Yasunaga (2001), it is without doubt a member of *Sejanus.* Characters allowing this conclusion are the small size, a small, C-shaped endosoma with a weakly sclerotized secondary gonopore, primarily dark brown coloration with the anterior of the cuneus with a thin white band along the margin with the cuneal fracture, the absence of maculation on the metatibia, and the short, flat metafemur.

HOLOTYPE: **JAPAN:** Ryukyus: Amami-Oshima Is., Chinaze, Naze. 10. v. 1987, T. Yasunaga 1♂ (HUES) [not examined].

Sejanus brassi Schuh
Figure 35

Sejanus brassi Schuh, 1984: 159, figs. 500, 520, 523–525 (diag., descr., disc., DV, MG).

DIAGNOSIS: Recognized by castaneous coloration, two separated white spots on anterior margin of cuneus, yellowish antennal segment 1, basal half of segment 2, apices of all femora, and all tibiae and tarsi, circular subapical secondary gonopore, and distinctly ovoid apex of endosoma.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: *Sejanus brassi* is similar in appearance to *S. howardae,* but the latter taxon has completely yellowish femora.

HOLOTYPE: **PAPUA NEW GUINEA: Eastern Highlands Prov.:** Purosa Camp, Okapa area, 15 mi SSE of Okapa Patrol Post, 1950 m, September 26–30, 1959, L.J. Brass. 1♂ (AMNH).

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Central Prov.:** Mt. Dayman, Maneau Range, 9.81683°S 149.29001°E, 877 m, 30 Jun 1953–13 Jul 1953, G.M. Tate, paratype, 1♂ (00196103) (AMNH). **Eastern Highlands Prov.:** Purosa Camp, Okapa area, 15 mi SEE of Okapa Patrol Post, Camp #10, 6.66362°S 145.5655°E, 1950 m, 20 Sep 1959, L J. Brass, paratype, 1♂ (00196099) (AMNH); 26 Sep 1959–30 Sep 1959, L.J. Brass, paratype, 3♂ (00196100–00196102) (AMNH).

Sejanus brevinger Yasunaga

Sejanus brevinger Yasunaga, 2001: 124, figs. 6, 11 (n. sp., descr., disc., DV, MG).

DIAGNOSIS: Recognized by small size, completely dark brown hemelytron lacking any white pigmentation on anterior margin of cuneus, completely dark metafemur, and rounded apex of endosoma.

DESCRIPTION: See Yasunaga (2001).

HOSTS: *Mallotus* sp. (Euphorbiaceae).

DISTRIBUTION: Japan (Shikoku, Kyushu, Ryukyus: Okinawa Is.).

DISCUSSION: The small size, short metafemur, dark hemelytron and body, and the C-shaped endosoma as illustrated and documented in the original description clearly indicate this species firmly belongs to *Sejanus,* even though we were unable to examine specimens of this species directly. The almost completely dark brown coloration of is species is unique, whereas most *Sejanus* species have at least part of the cuneal margin white and the apical half of the tibiae golden.

HOLOTYPE: **JAPAN:** Ryukyus: Okinawa Is., Mt. Nishimedake, Kunigami Village.,

25.v.1993, T. Yasunaga. 1♂ (HUES) [not examined].

Sejanus brittoni Carvalho and Gross
Figures 34, 38A–D; plate 7

Sejanus brittoni Carvalho and Gross, 1982: 17, figs. 16–18, 99 (n. sp., descr., DV, MG).

DIAGNOSIS: Distinguished from other members of *Sejanus* by deep burgundy-red coloration of hemelytron, partial pale transverse fascia across medial area of claval suture (pl. 7), and presence of a serrated membrane along dorsal surface and apex of endosoma. *Sejanus brittoni* similar in coloration to *S. palumae*, but red basal coloration of femora in *S. brittoni* and structure of apex of endosoma clearly separate the two species. Female nearly identical in coloration and patterning to male and identical to female of *S. palumae*.

REDESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.47–3.12, width pronotum 0.85–0.96, maximum width across hemelytra 0.99–1.24. COLORATION: Eyes deep red to purple. Labium pale brown with medial segments paler gold color. Antennal segment 1 gold, segment 2 gold basally and dark distally for last ⅓ of total length, segment 3 gold basally for first ⅓ of total length, segment 4 completely dark brown. Dorsolateral margin of metepisternum and scent gland unicolorous with thorax. Coxae mostly dark red to brownish with distal margin with faintly white. All femora reddish proximally, gold distally. Tibiae gold, metatibia with parallel rows of dark spicules. Basal tarsomeres gold, distally brown. Hemelytra pale red to dark red with partial, faint gold transverse fascia across medial area of clavus just posterior to apex of scutellum (pl. 7). Anterior margin of cuneus with two white spots confluent in some specimens, one along lateral margin and one next to anterior margin with membrane, remainder of cuneus dark red. Membrane pale brown with medial lightening, posterior margin of veins tinted red. Abdomen dark red. STRUCTURE: Frons convex, clypeus exserted and visible in dorsal view of head. Vertex flat, posterior margin flat, width approximately equal to one eye. Eyes distinctly removed from dorsal surface of vertex in anterior view, occupying entire height of head in lateral view, posterior margin partially obscuring anterior margin of pronotum. Labium extending past apex of metacoxa. Antennal segment 2 1.33 times longer than head width. Metafemur approximately 1.33 times longer than pro- and mesofemora. GENITALIA: **Pygophore:** Small, lacking elaborations, occupying about ¼ length of abdomen, ventral margin sloping upward toward apex. **Endosoma:** Small, slender, tubular, C-shaped. Secondary gonopore small, horse-collar shaped, in lateral view of illustration, located at apex of endosoma (fig. 38A). **Phallotheca:** Fairly small, L-shaped, apex relatively wide and gently tapering toward a point (fig. 38D). **Right Paramere:** Paramere small, smaller in total size than left paramere, parallel sided with tapering, pointed apex (fig. 38B). **Left Paramere:** Small; posterior process slender and pointed, straight, with apex directed perpendicular to base of paramere, relatively short and close in size to anterior process, possessing sensory pits; anterior process stout but without pits on interior margin, dorsal surface near midpoint of total height of paramere (fig. 38C).

Female: Macropterous, small, elongate ovoid. Total length 2.33–2.77, width pronotum 0.90–1.02, maximum width across hemelytra 1.14–1.29. STRUCTURE: Width of vertex just short of half total head width. Length antennal segment 2 1.10 times total head width. COLORATION: Same pattern as in male with following exceptions: hemelytron darker and browner and partial transverse fascia more obvious (pl. 7).

HOSTS: Primarily Myrtaceae, but also found on Rhamnaceae, Lauraceae, Elaeocarpaceae, Fabaceae, Araliaceae, Casuarinaceae, and Cunoniaceae.

DISTRIBUTION: Eastern Australia.

DISCUSSION: Carvalho and Gross (1982) stated that this species was collected at the same locality and time as *S. palumae*. Both share nearly identical external morphologies, but differ in the structure of the endosoma. Our investigation of the two nominal species confirms that they do in fact have subtle differences in the external morphology as well as the male genitalia. Both species have a serrated membrane along the dorsal and

medial margins of the endosoma, which was not documented in the original descriptions. *Sejanus brittoni* differs from *S. palumae* in that the serrated membrane terminates subapically, whereas the apex in *S. palumae* has an extended serrated portion (fig. 38A).

HOLOTYPE: **AUSTRALIA: Queensland**: Paluma Dam, 30–31.xii.1964, H.A. Rose 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: New South Wales:** 0.5 km SE of Lansdowne, 29 Oct 1990, G. Williams, *Elaeocarpus obovatus* G.Don (Elaeocarpaceae), 1♂ (00393667) (AM); 12 Nov 1990, G. Williams, *Syzygium smithii* (Poir.) Nied. (Myrtaceae), 1♀ (00393665) (AM); 19 Nov 1990, G.A. Williams, *Rhodomyrtus psidioides* (G.Don) Benth. (Myrtaceae), 1♂ (00371965) (AM). 3 km N of Lansdowne, via Taree, 31.757°S 152.534°E, 30 Oct 1990, G. Williams, *Cryptocarya microneura* Carl Meissner (Lauraceae), 1♂ (00274182) (AM). 4 km NNW of Lansdowne, 33.865°S 150.951°E, 13 Feb 1992, G. Williams, *Alphitonia excelsa* (Fenzl) Benth. (Rhamnaceae), 1♂ (00274183) (AM); 22 Feb 1992, G. Williams, *Alphitonia excelsa* (Fenzl) Benth. (Rhamnaceae), 1♂ (00274162) (AM). Ashfield, 33.8991°S 151.1246°E, 13 Apr 1980, D.A. Doolan, 1♀ (00393688) (AM). Bournda National Park, North Wallagoot, Turingal Head, 36.78452°S 149.9568°E, 16 m, 20 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Kunzea ambigua* (Sm.) Druce (Myrtaceae), det. NSW staff NSW658199, 2♂ (00272717, 00272718), 1♀ (00272716) (AMNH). Dee Why Beach, off Dee Why Parade Road, 33.75°S 151.28333°E, 22 Nov 2006–23 Nov 2006, K. Menard and N. Tatarnic, *Acacia mearnsii* (Fabaceae), 1♀ (00108575) *Melaleuca* sp. (Myrtaceae), 1♀ (00108560) (AMNH). Dorrigo National Park, 30.382°S 152.751°E, 13 Nov 1990–15 Nov 1990, Kireychuk, 2♂ (00229510, 00229511) (ZISP). O'Sullivan Gap, 10 km NE by N of Buladelah, 32.33333°S 152.31666°E, 15 Nov 1976, I.F.B. Common & E.D. Edwards, 1♀ (00393664) (AM). Royal National Park, Lady Carrington Drive, 34.15°S 151.0293°E, 78 m, 02 Dec 2006, K. Menard and N. Tatarnic, *Acacia mearnsii* (Fabaceae), 1♂ (00108578) (AMNH). St. Forest W of Ulladulla, above Carters Creek, 35.5152°S 150.0346°E, 200 m, 11 Nov 1995, Schuh and Cassis, *Astrotricha latifolia* Benth. (Araliaceae), det. B.M. Wiecek 1996 NSW 396004, 1♂ (00272715) (AMNH). Wingham, 31.865°S 152.368°E, 22 Nov 1990, G. Williams, *Waterhousia floribunda* (F.Muell.) B.Hyland (Myrtaceae), 1♀ (00393666) (AM); 24 Dec 1990, G. & T. Williams, *Tristaniopsis laurina* (Sm.) Peter G.Wilson & J.T.Waterh. (Myrtaceae), 1♀ (00371964) (AM). approx. 0.5 km SE of Lansdowne via Taree, 31.785°S 152.538°E, 29 Oct 1990, G. Williams, *Elaeocarpus obovata* G.Don (Elaeocarpaceae), 1♂ (00371992) (AM). **Queensland:** ***North Queensland Co.:*** Cardstone, 29 Dec 1965, K. Hyde, 1♀ (00393684) (AM). Acacia Ridge, Brisbane, 17 Oct 1964, Unknown, 1♂ (00392787) (MVMA). Atherton Tablelands, Curtain Fig. Tree National Park, 17.28736°S 145.57233°E, 762 m, 30 May 2006, Cassis, Barrow, Finlay, Symonds, 1♀ (00195668) (AMNH). Brisbane, 27.46785°S 153.02801°E, 10 Apr 1961–15 Apr 1961, J.L. & M. Gressit, 1♂ (00318931) (BPBM). Crediton Creek, near Eungella, 12 Dec 1961, McAlpine & Lossin, paratype, 1♂ (00393298) (AM). Millaa Millaa, 12 km S Rt. 25, 31°S 147.61666°E, 01 Sep 1990, T.J. Henry, 3♂ (00374130–00374132), 9♀ (00374133–00374141) (USNM). Monto, 25 Km N., 24.68333°S 150.96666°E, 13 Dec 1990, T. Gush, 1♂ (00274273) (AM). Moses Ck. 4 km N by E of Mt. Finnigan, 15.47°S 145.17°E, 14 Oct 1980–16 Oct 1980, T. Weir, 2♀ (00393686, 00393687) (AM). Mt. Lewis, 11.3 km along Mt. Lewis Road, 16.59194°S 145.27083°E, 30 Apr 1998, G. Cassis, 3♂ (00371867–00371869) (AM). National Park, Mcpherson Range, 28.35°S 153°E, 14 Mar 1982, Darlington, 1♀ (00318930) (BPBM). Paluma, 2 km W of, 19.01666°S 146.2°E, 02 Dec 1990, T. Gush, 4♂ (00274269–00274272), 1♀ (00274268) (AM). Tully Falls, 17.783°S 145.567°E, 900 m, 10 Mar 1956, J.L. Gressitt, Light Trap, 1♂ (00318914) (BPBM). **Tasmania:** 3 km E of Orford, 42.55999°S 147.8482°E, 25 m, 14 Nov 2002, Cassis, Schuh, Schwartz, Silveira, 1♀ (00272383) (AMNH). Freycinet National Park, 41.99339°S 148.2814°E, 70 m, 14 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Allocasuarina littoralis* (Salisb.) L.A.S.Johnson (Casuarinaceae), det. NSW staff NSW658170, 1♀ (00272382) (AM), 6♀ (00108577, 00272378–

00272381, 00272384) (AMNH). Friendly Beaches, Freycinet Peninsula, 41.98819°S 148.2876°E, 19 m, 13 Nov 2002, Cassis, Schuh, Schwartz, Silveira, *Allocasuarina littoralis* (Salisb.) L.A.S.Johnson (Casuarinaceae), det. NSW staff NSW658165, 10♂ (00108561, 00272365–00272372, 00272374), 3♀ (00108559, 00108574, 00272375) *Kunzea ambigua* (Sm.) Druce (Myrtaceae), det. NSW staff NSW658156, 1♂ (00108566), 9♂ (00272357–00272364, 00272373), 2♀ (00272376, 00272377) (AMNH). **Victoria:** Lower Glenelg National Park, 38.0476°S 141.1596°E, 20 m, 07 Nov 2002, Cassis, Schuh, Schwartz, Silveira, 1♀ (00272814) (AMNH). nr Belka R., Mallacoota, 02 Sep 1989–03 Sep 1989, McAlpine & Martin, 1♀ (00393663) (AM).

Sejanus chinai (Knight)

Idatiella chinai Knight, 1938: 27 (n. sp.).
Sejanus chinai: Carvalho, 1958: 141 (cat.); Schuh, 1984: 161 (disc.).

DIAGNOSIS: Similar in coloration and size to *S. priscillianus* but differs in longer, completely dark brown antennal segment 2. Also recognized by completely black antennal segment 1 and white area occupying anterior two-fifths of cuneus.

DESCRIPTION: See Knight (1938).

HOSTS: Unknown.

DISTRIBUTION: India.

DISCUSSION: Schuh (1984) stated that the holotype of this taxon presumably was deposited at the Natural History Museum, London, but did not examine it. We were also not able to examine the type, nor subsequently identified specimens. However, based on the original description, the species appears to be within the same size range, coloration, and body form of other *Sejanus* taxa, particularly *S. priscillianus*, with which it was compared in the original diagnosis.

HOLOTYPE: **INDIA: South India:** Kodai Kanal, T.V. Campbell, 1♀ (BMNH) [not examined].

Sejanus cinnameus Schuh
Figure 35

Sejanus cinnameus Schuh, 1984: 161, figs. 499, 521, 526–528 (diag., descr., disc., DV, MG).

DIAGNOSIS: Recognized by reddish-brown coloration, two faint white spots on anterior margin of cuneus, pale coloration of hemelytra, and elongate J-shaped endosoma with a spinelike process at apex.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: The coloration of this species is similar to that of *S. brittoni* and *S. palumae,* but *S. cinnameus* can be distinguished by the form of the male genitalia and the more brownish overall coloration.

HOLOTYPE: **PAPUA NEW GUINEA: Western Highlands Prov.:** 6.4 km W of Wabag, 2020 m, June 13, 1963, J. Sedlacek. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Eastern Highlands Prov.:** No. 7, Kotuni, south slopes Mt. Otto, 5.97991°S 145.48575°E, 2200 m, 04 Aug 1959–20 Aug 1959, L.J. Brass, paratype, 1♂ (00196104) (AMNH). **Enga Prov.:** 6.4 km W Wabag, 5.483°S 143.641°E, 2020 m, 13 Jun 1963, J. Sedlacek, paratype, 1♂ (00095332), paratype, 1♂ (00196105) (AMNH), paratype, 5♂ (00321180–00321184) (BPBM). **Southern Highlands Prov.:** Betege, 20 km NW of Koroba, 5.61062°S 142.57485°E, 1600 m, 21 Oct 1963, R. Straatman, Light Trap, paratype, 1♂ (00321179) (BPBM).

Sejanus crassicornis (Poppius)

Eosthenarus crassicornis Poppius, 1915: 73 (n. sp).
Chlamydatus crassicornis: Carvalho, 1958: 32 (cat.); Carvalho, 1980: 650 (diag., type specimen).
Sejanus crassicornis: Kerzhner and Schuh, 1995: 5 (n. comb.); Schuh, 1995: 245 (cat.).

DIAGNOSIS: Recognized by the dark castaneous coloration of the hemelytron without possessing a transverse fascia, two white spots on the anterior margin of the cuneus, the completely white third and fourth antennal segments, and weakly rugulose pronotum.

DESCRIPTION: See Poppius (1915).

HOSTS: Unknown.

DISTRIBUTION: Taiwan.

DISCUSSION: We were able to examine an image of the holotype. Based on that examination and a brief description of the type by Carvalho (1980) it appears to share most of the typical external color and morphological

characters of species in this genus. Further investigation into the characters of the male genitalia will likely reveal additional unique characters that more clearly separate it from other *Sejanus* species.

HOLOTYPE: **TAIWAN [Formosa]:** Sauter, Takan, 1907 1♂ (ZMUH) [image examined].

Sejanus ecnomioides Schuh
Figure 35

Sejanus ecnomioides Schuh, 1984: 162, figs. 498, 534, 549 (diag., descr., disc., DV, MG).

DIAGNOSIS: Recognized by the castaneous coloration, the two white spots on the anterior margin of the cuneus, the pale antennal segment 1, golden colored trochanters and extreme distal portion of all femora, the dorsally expanded medial portion of the left paramere forming a scoop shape, the apical spine on the endosoma nearly perpendicular to the main body, and the lack of a visible secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Malaysia.

DISCUSSION: Schuh (1984) noted that this species is very similar in appearance, overall morphology, and structure of the male genitalia to *S. ecnomiscos* and *S. ecnomios*, but indicated that *S. ecnomioides* is smaller in size than *S. ecnomios*, and the white spots on the cuneus in *S. ecnomioides* are more intense than in the other taxa.

HOLOTYPE: **MALAYSIA: Malaya:** Cameron Highlands, Mt. Bichang, January 2–7, 1959, L.W. Quate. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **MALAYSIA: Pahang: *Cameron Highlands Co.:*** Mt. Brichang, 4.51472°N 101.38355°E, 1807 m, 02 Jan 1959–07 Jan 1959, L.W. Quate, paratype, 1♂ (00321171) (BPBM).

Sejanus ecnomios Schuh
Figure 35

Sejanus ecnomios Schuh, 1984: 162, figs. 499, 535, 537–540, 541–545 (diag., descr., disc., n. sp., diag., descr., DV, MG, figs. head-pronotum).

DIAGNOSIS: Recognized by relatively large size, nearly completely dark coloration, two separate white spots on anterior margin of cuneus, dorsal-medial margin of left paramere expanded and with anterior process directed in an alternate direction from posterior process, nearly U-shaped endosoma with secondary gonopore appearing as a twisted circle, and endosoma with an apical spine.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: Schuh (1984) hypothesized that this species is closely related to *S. ecnomioides* and *S. ecnomiscos* based on the expanded dorsomedial margin of the left paramere, a feature that otherwise is not found in Leucophoropterini.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Mt. Kaindi, 2400 m, January 27, 1963, MV light, J. Sedlacek. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **MALAYSIA: Pahang: *Cameron Highlands Co.:*** Mt. Brichang, 4.51472°N 101.38355°E, 1807 m, 02 Jan 1959–07 Jan 1959, L.W. Quate, paratype, 1♂ (00196106) (AMNH). **PAPUA NEW GUINEA: Morobe Prov.:** 16 km SW of Wau, 7.45893°S 146.63596°E, 2706 m, 31 May 1962, J.L. Gressitt, Light Trap, paratype, 1♂ (00321165) (BPBM). Mount Kaindi, 7.35°S 146.683°E, 2400 m, 08 Jun 1962–09 Jun 1962, J. Sedlacek, Light Trap, paratype, 1♂ (00321163) (BPBM); 27 Jan 1963, J. Sedlacek, paratype, 1♂ (00095333) (AMNH), Light Trap, paratype, 5♂ (00321158–00321162) (BPBM). Mount Kaindi, 7.35°S 146.6833°E, 2360 m, 27 Jan 1963, J. Sedlacek, paratype, 1♂ (00196107) (AMNH); 18 Sep 1972, G.G.E. Scudder, paratype, 1♂ (00196108) (AMNH). Wau, 7.3333°S 146.71667°E, 1200 m, 17 Jan 1963–20 Jan 1963, J. Sedlacek, Light Trap, paratype, 1♂ (00321164) (BPBM).

Sejanus ecnomiscos Schuh
Figure 35

Sejanus ecnomiscos Schuh, 1984: 164, figs. 498, 536, 546–548 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by almost completely castaneous coloration, presence of two white spots on anterior margin of cuneus, expanded dorsomedial area of left paramere, horse-collar–shaped secondary gonopore, and apex of endosoma terminating in a long, sinuous spine.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands.

DISCUSSION: Schuh (1984) hypothesized that this species is closely related to *S. ecnomioides* and *S. ecnomios* based on the expanded dorsal-medial margin of the left paramere. However, *S. ecnomiscos* is unique by having a subapical horse-collar–shaped secondary and a long tapering spine at the apex of the endosoma parallel to the main body, attributes that are absent in the other two taxa.

HOLOTYPE: **PHILIPPINE ISLANDS: Mindanao:** Misamis Oriental, Mt. Pomalihi, 21 km W of Gingoog City, 800–1000 m, October 9, 1965, light trap, H.M. Torrevillas. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PHILIPPINES: Camarines Sur:** Mt. Isarog, Pili, 13.70805°N 123.75083°E, 800 m, 28 Apr 1965, H.M. Torrevillas, Light Trap, paratype, 3♂ (00321195–00321197) (BPBM). **Mindano:** Mis. Or., Mt. Pomalihi, 21 km W. Gingoog City, 8.81118°N 124.92327°E, 859 m, 15 Sep 1965, H.M. Torrevillas, Light Trap, paratype, 1♂ (00321192) (BPBM); 06 Oct 1965, H.M. Torrevillas, Light Trap, paratype, 1♂ (00321193) (BPBM); 07 Oct 1965, H.M. Torrevillas, Light Trap, paratype, 1♂ (00321191) (BPBM); 09 Oct 1965, H.M. Torrevillas, Light Trap, paratype, 1♂ (00321194) (BPBM); 11 Oct 1965, H.M. Torrevillas, paratype, 3♂ (00196109–00196111) (AMNH).

Sejanus elongatus Schuh
Figure 35

Sejanus elongatus Schuh, 1984: 165, figs. 499, 522, 529–533 (diag., descr., disc., n. sp., diag., descr., DV, MG, figs. head-pronotum).

DIAGNOSIS: Recognized by relatively elongate body form, overall castaneous coloration, hemelytra with white lateral markings on corium adjacent to midpoint of clavus, single white spot on interior anterior margin of cuneus, antennal segment 1 yellowish, segment 3 white proximally, and serrated membrane on apical half of endosoma.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: *Sejanus elongatus* is unique in having the lateral white patches adjacent to the clavus, which are not present in any of the other species of *Sejanus*. A serrated membrane on the endosoma is also found in *S. brittoni, S. palumae*, and *S. melas*.

HOLOTYPE: **INDONESIA: West Irian:** Wisselmeren, Itouda, Kamo Valley, 1500 m, August 12, 1955, light trap, J.L. Gressitt. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Irian Jaya:** Swart Val.: Karubaka, 3.6°S 138.4667°E, 1500 m, 09 Nov 1958, J.L. Gressitt, 1♂ (00095334) (AMNH). Swart Val. Karubaka, 1550 m, 16 Nov 1958, J.L. Gressitt, paratype, 1♂ (00321178) (BPBM). **Papua:** ***Kamo-Debei Division Co.:*** Wisselmeren, 1700 m, 13 Aug 1955, J.L. Gressitt, paratype, 1♂ (00321177) (BPBM). ***Paniai Division Co.:*** Wesselmeren: Tage Lake, 3.95561°S 136.30057°E, 1777 m, 04 Aug 1955, J.L. Gressitt, paratype, 1♂ (00321175) (BPBM). Bokondini, 40 km N of Baliem Val., 3.88589°S 138.8471°E, 2325 m, 16 Nov 1961–23 Nov 1961, L.W. Quate, paratype, 1♂ (00321176) (BPBM). **PAPUA NEW GUINEA: Western Province:** Star Mts. Sibil Val., 5.04823°S 140.97958°E, 1245 m, 18 Oct 1961–08 Nov 1961, S. Quate & L. Quate, paratype, 2♂ (00196112, 00196113) (AMNH), paratype, 3♂ (00321172–00321174) (BPBM).

Sejanus funerellus Schuh
Figure 36

Sejanus funerellus Schuh, 1984: 170, figs. 498, 551, 567–569 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by relatively small size and ovoid shape, overall castaneous coloration without white pigmentation on corium or cuneus, yellowish antennal segment 1, proximal half of segment 2, and pro- and mesotibiae, and endosoma with an ovoid secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands.

DISCUSSION: Schuh (1984) stated that *S. funerellus* is similar in size and coloration to *S. funereus* and *S. funerioides*, but is distinguished from those two species based on dimensions and shape of secondary gonopore.

HOLOTYPE: **PHILIPPINE ISLANDS: Negros Island:** Camp Lookout, Dumaguete,

May 20, 1961, T.C. Schneirla and A. Reyes. 1♂ (AMNH).

SPECIMENS EXAMINED: **PHILIPPINES: Negros Oriental:** Dumaguete, Camp Lookout, 9.3103°N 123.3081°E, 06 Feb 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00196134) (AMNH); 15 Feb 1961–14 Apr 1961, T. Schneirla & A. Reyes, paratype, 10♂ (00196120–00196121, 00196123–00196128, 00196132–00196133) (AMNH); 20 Mar 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00196129) (AMNH); 03 May 1961, T. Schneirla & A. Reyes, 1♂ (00196137) (AMNH); 20 May 1961, T. Schneirla & A. Reyes, paratype, 3♂ (00196130, 00196135–00196136) (AMNH); 22 May 1961, T. Schneirla & A. Reyes, paratype, 2♂ (00196119, 00196131) (AMNH); 25 May 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00196122) (AMNH).

Sejanus funereus Distant

Sejanus funereus Distant, 1910: 21 (n. sp.); Carvalho, 1958: 141 (cat.); Schuh, 1984: 170, figs. 552, 564–566 (diag., DV, MG).

DIAGNOSIS: Recognized by its relatively small size and ovoid shape, overall castaneous coloration with two confluent white spots on anterior margin of cuneus, yellow antennal segment 1, proximal ⅓ to ½ of segment 2, apices of all femora, all tibiae and tarsi, and apex of endosoma with two lateral thickenings and no visible secondary gonopore.

DESCRIPTION: See Distant (1910) and Schuh (1984).

HOSTS: Verbenaceae and Anacardiaceae.

DISTRIBUTION: South India, Sri Lanka.

DISCUSSION: This is the type species of *Sejanus,* and although the external morphology of most Indo-Pacific, Oriental, and Palearctic *Sejanus* species is nearly identical, other species differ from *S. funereus* in the shape of the apex of the endosoma and parameres. *Sejanus funereus* has one of the most simplified forms of the endosoma, a simple C-shaped tube with no visible secondary gonopore, whereas most species have the secondary gonopore visible and have various elaborations on the morphology of the apex (e.g., *S. ecnomiscos*).

HOLOTYPE: **SRI LANKA:** Ceylon, E.E. Green, Holotype, 1♂ (00085515) (BMNH) [not examined].

SPECIMENS EXAMINED: **INDIA: Tamil Nadu:** Anamalai Hills, Cinchona, 10.06666°N 76.91666°E, 1067 m, Apr 1956, P.S. Nathan, 1♂ (00095337) (AMNH). **SRI LANKA: Central Prov.:** Elkaduwa, Hunas Falls Hotel, 7.40194°N 80.68972°E, 747 m, 28 Mar 1999, T.J. Henry & A. Wijisekara, *Lantana camara* (Verbenaceae), 1♀ (00301019) (USNM). Sri Lankan Agric. Res. Sta. Sita Eliya (3 km SE of Nuwara Eliya), 22 Mar 1999, T.J. Henry & A. Wijisekara, *Mangifera indica* (Anacardiaceae), 1♀ (00271661) (USNM). **Southern Province:** Kanneliya, 6.22579°N 80.38323°E, 61 m, 15 Oct 1976–17 Oct 1976, G.F. Hevel, R.E. Dietz, S. Karunaratne, D.W. Balasooriya, 1♂ (00271664) (USNM).

Sejanus funerioides Schuh
Figure 36

Sejanus funerioides Schuh, 1982: 171, figs. 499, 570, 580–582 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by relatively large size, parallel lateral hemelytral margins, castaneous coloration, two confluent reddish white spots on anterior margin of cuneus, pale antennal segment 1, tibiae, tarsi, and distal margins of femora, no visible secondary gonopore, and broad posterior process of left paramere.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: *Sejanus funerioides* superficially looks like *S. funereus* in overall coloration and body morphology, and shares similar morphology in the left paramere with both species having a broad posterior process (Schuh, 1982: figs. 565, 581 respectively). However, the unique apical morphology of C-shaped endosoma, with what appears to be a sclerotized flap rather than a visible secondary gonopore (Schuh 1982: fig. 580), clearly differentiates it as a distinct species within *Sejanus*.

HOLOTYPE: **PAPUA NEW GUINEA: Western Highland Prov.:** 6.4 km W of Wabag, 2020 m, June 13, 1963, J. Sedlacek, Holotype, 1♂ (00085515) (BMNH) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Enga Prov.:** 6.4 km W Wabag, 5.483°S 143.641°E, 2020 m, 13 Jun 1963, J. Sedlacek, paratype, 1♂ (00095338), paratype,

1♂ (00196390) (AMNH), paratype, 3♂ (00321154–00321156) (BPBM). **Prov. unknown:** Eliptamin Valley, 1980 m, 16 Aug 1959–30 Aug 1959, W.W. Brandt, paratype, 1♂ (00321157) (BPBM).

Sejanus howardae Carvalho and Gross
Plate 7, Figures 34, 38E–G

Sejanus howardae Carvalho and Gross, 1982: 16, fig. 98 (n. sp., descr., disc., DV).

DIAGNOSIS: Similar in color pattern to *S. funereus* and *S. priscillianus* in being completely brown, and having two white spots on anterior margin of cuneus (pl. 7). However, *S. howardae* is clearly differentiated from these two species by completely pale metatibia and shape of endosomal apex.

REDESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.03–2.23, width pronotum 0.77–0.90, maximum width across hemelytra 0.94–0.99. COLORATION: Eyes deep red to purple. Labium brown. Antennal segment 1 gold, segment 2 gold proximally and dark on distally ¼, segments 3 and 4 gold. **Thorax:** Pronotum, scutellum, and thorax dark brown. All coxae dark brown. Profemur dark brown proximally, gold distally, meso- and metafemora predominantly dark brown but becoming reddish at joint with tibiae. All tibiae completely gold, metatibiae with parallel rows of dark spicules. Tarsomeres gold. Hemelytra completely brown (pl. 7). Anterior margin of cuneus with two lateral white spots with reddish tinge at margin with cuneal fracture. Membrane pale brown with medial lightening, lacking pigmentation on veins. Abdomen dark brown. STRUCTURE: Frons convex, clypeus exserted and visible in dorsal view. Vertex flat, posterior margin flat, wider than width of one eye. Eyes distinctly removed from dorsal surface of vertex in anterior view, occupying entire height of head in lateral view, posterior margin partially obscuring anterior of pronotum. Labium just surpassing apex of metacoxa. Antennal segment 2 more than 1.10 times longer than head width. Metafemur less than 1.25 times longer than pro- and mesofemora. GENITALIA: **Pygophore:** Small, lacking elaborations, occupying about ¼ length of abdomen, ventral margin sloping upward toward apex. **Endosoma:** Small, slender, J-shaped with the apex weakly twisted, composed of two straps united by smooth membrane and twisting medially, apex spinelike, twisted and reflexed. Secondary gonopore small, horse-collar shaped, located subapically on endosoma (fig. 38E). **Phallotheca:** Fairly small, L-shaped, apex broadly tapering toward a point (fig. 38G). **Right Paramere:** Small, parallel sided, apex in form of spinelike process, nearly identical to *S. palumae*. **Left Paramere:** Small, posterior process relatively slender, with straight dorsal margin, directed dorsally, relatively elongate compared to anterior process and with sensory pits; anterior process stout but without sensory pits on interior margin (fig. 38F).

Female: Macropterous, small, elongate ovoid. Total length 2.55–2.62, width pronotum 0.95–1.02, maximum width across hemelytra 1.08–1.19. STRUCTURE: Vertex occupying over half of total head width, over 1.5 times as wide as width of one eye. Antennal segment 2 nearly 1.2 times wider than total head width. COLORATION: Same pattern as in male.

HOSTS: Unknown, collected at lights.

DISTRIBUTION: Australia: Queensland, ACT.

DISCUSSION: *Sejanus howardae* shares similarities in size, coloration, and smooth endosomal membrane with most *Sejanus* spp. from the Indo-Pacific. The other two strictly Australian *Sejanus* species, *S. palumae* and *S. brittoni*—both of which are present in eastern and southern Australia—have several unique and apparently derived characters such as the reddish coloration and serrated membrane on the endosoma, unlike *S. howardae* (Menard and Woolley, in press).

HOLOTYPE: **AUSTRALIA: Queensland**: Paluma Dam, 30–31.xii.1964, H.A. Rose 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: AUSTRALIA: Australian Capital Territory:** Canberra, 35.33333°S 149.16666°E, 26 Aug 1990, T.J. Henry, 1♂ (00271757) (USNM). **Queensland:** 7.5 km S of Henrietta Crk; Palmerston Nat. Forest; 28 km S of Millaa Millaa, 17.51666°S 145.61666°E, 01 Sep 1990, T.J. Henry, 1♂ (00271754), 2♀

(00271755, 00271756) (USNM). Iron Range, Cape York Peninsula, 12.7°S 143.3°E, 24 Jun 1948–26 Jun 1948, G.M. Tate, 2♀ (00318926, 00318927) (BPBM). Iron Range, east bank of East Claudie River, 12.8333°S 143.35°E, 15 m, 25 Jun 1948, G.M. Tate, 4♀ (00318919–00318921, 00318932) (BPBM). Iron Range Airport, Gordon Strip, N.Q., 5 mi S of Iron Range, 12.78787°S 143.30701°E, 24 m, 10 Jun 1948, G.M. Tate, 1♀ (00318933) (BPBM), 1♂ (00246699), 1♀ (00246701) (TAMU). Kuranda, 16.81722°S 145.635°E, 370 m, 04 Sep 1990, T.J. Henry, 2♂ (00271751, 00271758), 1♀ (00271750) (USNM). Kuranda, 16.81722°S 145.635°E, 200 m, 13 Mar 1956, J.L. Gressitt, Light Trap, 1♂ (00318918), 2♀ (00318916, 00318917) (BPBM). Mission Beach, 17.52°S 146.05°E, 20 m, 12 Nov 1990, W.F. Chamberlain, 1♂ (00246700) (TAMU). S of Ravenshoe, Evelyn Tableland, 17.75532°S 145.50337°E, 350 m, 10 Mar 1956, J.L. & M. Gressit, Light Trap, 1♂ (00318935) (BPBM). Tozer Range, Cape York Peninsula, 12.7833°S 143.2167°E, 122 m, 01 Jul 1948–05 Jul 1948, G.M. Tate, 1♂ (00318924), 1♀ (00318925) (BPBM). Tully Falls, 17.783°S 145.567°E, 900 m, 10 Mar 1956, J.L. Gressitt, 2♂ (00318913, 00318915) (BPBM). W by S of Black Mt., 26.41879°S 152.85422°E, 225 m, 26 Apr 1981, D.H. Colless, 1♂ (00168827) (ANIC).

Sejanus interruptus (Reuter)

Sthenarus interruptus Reuter, 1906: 79 (n. sp.); Carvalho, 1958: 145 (cat.).

Sejanus interruptus: Kerzhner and Schuh, 1995: 5 (n. comb).

Diagnosis: Recognized by completely dark coloration, all femora distally golden, completely yellow metatibia and tarsus, yellow antennal segments 1 and 3, paler brown coloration for basal half of antennal segment 2, and two white spots on anterior margin of cuneus.

Description: See Reuter (1906).

Hosts: Unknown.

Distribution: China.

Discussion: We were able to view images of a male syntype of this species. The coloration, shape of the head, and weakly convex lateral margins of the corium confirm that it belongs in *Sejanus*.

Holotype: **CHINA: Sichuan Prov.:** [Fubyankho River, Between Fubyan and Shintyan], 31.28668°N 102.47937°E, 2716 m, 05 Aug 1893, Potanin,1♂ (ZISP) [not examined].

Sejanus isarog Schuh
Figure 36

Sejanus isarog Schuh, 1984: 174, figs. 498, 572, 583–585 (diag., descr., disc., n. sp., diag., descr., DV, MG).

Diagnosis: Recognized by castaneous coloration, two large white spots on anterior margin of cuneus fused along midline and almost forming a white band, yellowish antennal segments 3 and 4, distal portion of profemur, pro- and mesotibiae, and all tarsi, and tubelike endosoma with an almost triangular-shaped secondary gonopore.

Description: See Schuh (1984).

Hosts: Unknown.

Distribution: Philippine Islands.

Discussion: The secondary gonopore in *S. isarog* is very similar in shape to that of *S. neofunereus*, but the external morphology, particularly the coloration of the anterior margin of the cuneus, clearly distinguished the two species.

Holotype: **PHILIPPINE ISLANDS: Luzon:** Camarines Sur, Mt. Isarog, Pili, 800 m, April 20, 1965, light trap, H.M. Torrevillas. 1♂ (BPBM) [not examined].

Specimens Examined: **PHILIPPINES: Albay Province:** Mt. Mayon, 16 km NW of Lagaspi, 13.25666°N 123.685°E, 900 m, 10 May 1962, H.M. Torrevillas, paratype, 1♂ (00196402) (AMNH). Mt. Mayon, 16 km NW of Lagaspi, 13.25666°N 123.685°E, 1200 m, 12 May 1962, H.M. Torrevillas, paratype, 1♂ (00196401) (AMNH). Mt. Mayon, 16 km NW of Lagaspi, 13.25666°N 123.685°E, 800 m, 08 May 1962, H.M. Torrevillas, Light Trap, paratype, 1♂ (00095341) (AMNH). **Angeles City:** Camp Lookout, Dumaguete, Negros Island, 9.3°N 123.3°E, 396 m, 28 May 1961, T. Schneirla & A. Reyes, 1♂ (00196403) (AMNH).

Sejanus juglandis Yasunga

Sejanus juglandis Yasunaga, 2001: 123, figs. 3, 8 (diag., descr., disc., biol., DV, MG).

DIAGNOSIS: This species is recognized by its large size, completely dark brown hemelytron and body without any white spots or a white band on apical margin of cuneus, apically golden femora, and C-shaped endosoma with spicules subapical to secondary gonopore.

DESCRIPTION: See Yasunaga (2001).

HOSTS: Juglandaceae.

DISTRIBUTION: Japan, Russian Far East.

DISCUSSION: We were able to examine a series of this species identified by Fedor Konstantiniov from Russia and confirmed the identification based on the male genitalia and large size. Most specimens were later used for molecular data but not associated with USI numbers. One female was retained as a voucher for the series and was affixed with the USI listed in the Specimens Examined section.

HOLOTYPE: **JAPAN: Hokkaido:** Ishikari, Mt. Teine, Sapporo C., 28.vii.1998, S. Gotoh & M. Yasunaga, ex *Juglans ailantifolia* (Juglandaceae), 1♂ (HUES) [not examined].

SPECIMENS EXAMINED: **RUSSIAN FEDERATION: Primorsky Terr.:** Gornotaezhnoe, 43.65°N 132.15°E, 13 Aug 2006, F. Konstantinov, 1♀ (00195991) (AMNH).

Sejanus luzonicus Schuh
Figure 36

Sejanus luzonicus Schuh, 1984: 174, figs. 498, 586, 589–591 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by small size, ovoid shape, dark brown coloration, two separate white spots on anterior margin of cuneus, reddish-yellow coloration of antennal segments 1, 3 and 4, yellow basal half of segment 2, all femora distally, and all tibiae and tarsi, reflexed anterior margin of endosomal apex, and partially visible secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands.

DISCUSSION: The reflexed endosomal apex in *S. luzonicus* is unique, whereas in other *Sejanus* spp. the apex is nearly straight or curved laterally relative to the main body of the endosoma.

HOLOTYPE: **PHILIPPINE ISLANDS: Luzon:** Camarines Sur, Mt. Isarog, Pili, 800–900 m, April 21, 1965, light trap, H.M. Torrevillas. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PHILIPPINES: Camarines Sur:** Mt. Isarog, Pili, 13.65°N 123.3833°E, 700 m, 13 Apr 1965, H.M. Torrevillas, Light Trap, paratype, 2♂ (00095342, 00095342) (AMNH).

Sejanus macer Schuh

Sejanus macer Schuh, 1984: 177, figs. 499, 587, 592–594 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by elongate body form with nearly parallel lateral margins, completely dark castaneous coloration of body and hemelytron including antennal segment 1, all trochanters, all femora excluding extreme apices adjacent to tibiae, and metatibiae, single, large white spot on interior anterior margin of cuneus, spinelike processes at apex of endosoma, and semicircular secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: Schuh (1984) noted that *S. macer* is nearly identical in body form to *S. elongatus*; however, the form of the male genitalia and the lack of white patches on the corium of *S. macer* distinguish the two taxa.

HOLOTYPE: **INDONESIA: West Irian:** Sururai village area, W shore of Lake Anggi Gitta, 1850 m, July 31, 1957, D.E. Hardy 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: unknown:** Irai R. area, N. of L. Anggi Giji, 1850 m, 25 Jul 1957, D.E. Hardy, paratype, 1♂ (00196404) (AMNH); 31 Jul 1957, D.E. Hardy, paratype, 1♂ (00095343) (AMNH).

Sejanus melas Schuh
Figure 36

Sejanus melas Schuh, 1984: 177, figs. 499, 588, 595–597 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by relatively large size, broad body with convex lateral margins, completely castaneous coloration of body and hemelytron, completely dark cuneus lacking white pigmentation, semicircular secondary gonopore, and serrated surface of distal half of endosoma.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: This taxon is relatively broad for its length, and is unusual in that the femora (excluding the extreme distal margin of the profemur) are completely dark castaneous to black.

HOLOTYPE: **PAPUA NEW GUINEA: Madag Prov.:** Finisterre Mountains, Moro Crater, 5500 feet., October 30–November 15, 1964, M.E. Bachus, 1♂ (BMNH) [not examined].

Sejanus neofunereus Schuh

Sejanus neofunereus Schuh, 1984: 178, figs. 498, 598, 601–603 (diag., descr., disc., DV, MG); Schuh, 1995 (cat.); Kerzhner and Josifov, 1999: 423 (cat.); Yasunaga, 2001: 123 (diag., DV, MG).

DIAGNOSIS: This species recognized by small size, ovoid shape, dark brown coloration, two white spots on anterior margin of cuneus, antennal segment 1, proximal portion of segment 2, and all tibiae and tarsi nearly white, and blunt apex of endosoma with a triangular-shaped secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown; Yasunaga (2001) stated found on evergreens.

DISTRIBUTION: Japan, Russia, China, and Philippines.

HOLOTYPE: **PHILIPINE ISLANDS: Leyte:** Abuyog, 35 mi. S. of Tacloban, July 5–8, 1961, Philippine Islands National Museum and American Museum of Natural History Expeditions. 1♂ (AMNH).

SPECIMENS EXAMINED: **HONG KONG: New Territories:** Tai Po Kau, 22.4333°N 114.1833°E, 222 m, 01 Jun 1964, Lee Kit Ming and Hui Wai Ming, Light Trap, paratype, 2♂ (00321101, 00321104) (BPBM); 10 Jun 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 1♂ (00321102) (BPBM); 03 Jul 1964–04 Jul 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 1♂ (00321103) (BPBM). Pok Ful Lam, 22.26434°N 114.12855°E, 41 m, 29 May 1964–30 May 1964, J.L. Gressitt, Light Trap, paratype, 1♂ (00321108) (BPBM); 30 May 1964–31 May 1964, J.L. Gressitt, Light Trap, paratype, 1♂ (00321105) (BPBM); 31 May 1964, J.L. Gressitt, Light Trap, paratype, 2♂ (00321106, 00321107) (BPBM). **PHILIPPINES: Angeles City:** Camp Lookout, Dumaguete, Negros Island, 9.3°N 123.3°E, 396 m, 15 Feb 1961–15 Apr 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00196409) (AMNH); 17 May 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00196408) (AMNH). **Isabela:** San Mariano, 20 Apr 1961–10 May 1961, P.I. Natl. Mus. & AMNH Expedifotion, paratype, 2♂ (00196406, 00196407) (AMNH). **Leyete:** Dagami, 14 mi SW of Tacloban, 18 Jul 1961, P.I. Natl. Mus. & AMNH Expedition, paratype, 1♂ (00196405) (AMNH). **TAIWAN: Nantou:** ***Ren-ai Township Co.:*** Huei-Sun For. Rec. Area, 5 km NE of Meiyuan, 24.0667°N 120.9833°E, 733 m, 10 Jul 1992–11 Jul 1992, T.J. Henry and A. G Wheeler, Jr., 1♂ (00271695) (USNM).

Sejanus niveoarcuatus (Reuter)

Sthenarus niveoarcuatus Reuter, 1906: 79; Carvalho, 1958: 146 (cat.).

Sejanus niveoarcuatus: Kerzhner and Schuh, 1995: 5 (n. comb).

DIAGNOSIS: See generic diagnosis.

DESCRIPTION: See Reuter (1906).

HOSTS: Unknown.

DISTRIBUTION: China.

DISCUSSION: We were not able to examine specimens or images of this species. At least one syntype has been located for this taxon in the Zoological Institute of Saint Petersburg and recorded in the PBI database (F. Konstantinov, pers. comm.).

SYNTYPE: **CHINA: Sichuan Prov.:** [Tachzhin'kho River Valley], 22 Jul 1893, Potanin, 1♀ (00229457) (ZISP) [not examined].

Sejanus palumae Carvalho and Gross
Plate 7, Figures 34, 38H–K

Sejanus palumae Carvalho and Gross, 1982: 18, figs. 19–21, 100 (n. sp., descr., disc., DV, MG).

Sejanus rosei rosei Carvalho and Gross, 1982: 19, fig. 101 (n. sp., descr., disc., DV). NEW SYNONYMY.

Sejanus rosei obscurior Carvalho and Gross, 1982: 20 (n. ssp., descr.); Schuh, 2008. NEW SYNONYMY.

DIAGNOSIS: Similar in coloration to *S. brittoni* but with darker brown hemelytron (pl. 7), absence of a transverse fascia across

medial portion of claval suture in male, less intense white cuneal pigmentation, presence of a narrow yellowish-white band along dorsolateral surface of metepisternum, only half of antennal segment 2 gold basally in male, lack of red pigmentation on veins in membrane, and primarily yellow femora in both sexes.

REDESCRIPTION: *Male*: Macropterous, small, elongate, and parallel sided. Total length 2.47–3.12, width pronotum 0.85–0.96, maximum width across hemelytra 0.99–1.24. COLORATION: Eyes deep red to purple. Labium pale brown with medial segments a paler gold color. Antennal segment 1 gold, segment 2 gold proximally and dark on distal ½, segment 3 gold on proximal ⅓, segment 4 completely dark brown. Dorsolateral margin of metepisternum and scent gland with a narrow band of whitish-yellow pigmentation. All coxae, pro- and mesofemora, and tibiae completely gold. Metafemora gold proximally, pale brown distally. Tibiae gold, metatibiae with parallel rows of dark spicules. Basal tarsomeres gold, distally brown. Hemelytron pale red to dark red with a partial, faint gold transverse fascia across medial area of clavus just posterior to apex of scutellum (pl. 7). Anterior margin of cuneus with one lateral faint white spot, transparent and reddish next to cuneal fracture, remainder dark red. Membrane pale brown with medial lightening, veins without pigmentation. Abdomen dark red. STRUCTURE: Frons convex, clypeus exserted and visible in dorsal view of head. Vertex flat, posterior margin flat, wider than width of one eye. Eyes distinctly removed from dorsal surface of vertex in anterior view, occupying entire height of head in lateral view, posterior margin partially obscuring anterior of pronotum. Labium just reaching apex of metacoxa. Antennal segment 2 more than 1.33 times longer than head width. Metafemur approximately 1.33 times longer than pro- and mesofemora, all femora weakly flattened. GENITALIA: **Pygophore:** Small and lacking elaborations, occupying about one-fifth total length of abdomen, ventral margin sloping upward toward apex. **Endosoma:** Small, slender, twisted, C-shaped, composed of a fused tube, with a serrated membrane on dorsal margin continuous along surface and extending past apex of endosoma. Secondary gonopore small, horse-collar shaped, located at apex of endosoma (fig. 38I). **Phallotheca:** Fairly small, L-shaped, apex gently tapering toward a point (fig. 38K). **Right Paramere:** Moderately sized, smaller than left paramere, parallel sided with a tapering, pointed apex (fig. 38H). **Left Paramere:** Moderately sized; posterior process slender, with sensory pits, and gently curving ventrally, relatively short and closer in size to anterior process; anterior process stout but without sensory pits on interior margin (fig. 38J).

Female: Macropterous, small, elongate ovoid. Total length 2.55–2.62, width pronotum 0.95–1.02, maximum width across hemelytra 1.08–1.19. STRUCTURE: Width of vertex nearly half total head width, over 1.5 times width of one eye. Antennal segment 2 1.2 times total head width. COLORATION: Same pattern as in male with following exceptions: hemelytron darker and browner (pl. 7), metafemur sometimes distally golden brown, and female with a complete transverse hemelytral fascia.

HOSTS: Unknown. Collected at lights.

DISTRIBUTION: Queensland.

DISCUSSION: *Sejanus brittoni* and *S. palumae* appear to be closely related based on overall coloration and characters of the male genitalia. However, in *S. palumae* the serrated membrane extends past the dorsal surface of the endosomal apex and partially around the anterior surface (fig. 38F). The female has a transverse hemelytral fascia, which is not usually present in the male and is absent in all the other species of *Sejanus*. Based on the original description and examination of the female holotypes of *S. rosei rosei* and *S. rosei obscurior*, both nominal taxa are *S. palumae*, and therefore are treated as junior synonyms.

HOLOTYPE: **AUSTRALIA: Queensland**: Paluma Dam, 30–31.xii.1964, H.A. Rose 1♂ (QM).

SPECIMENS EXAMINED: **AUSTRALIA: Queensland:** Dunbulla State Forest 1.1 km along Robson Creek track NW of Dunbulla Forest Drive, 17.11666°S 145.9°E, 25 Apr 1998, G. Cassis, 4♂ (00371854–00371857), 9♀ (00371858–00371866) (AM). Mt. Lewis, 11.3 km along Mt. Lewis Road, 16.59194°S 145.27083°E, 30 Apr 1998, G. Cassis, 2♀

(00371870, 00371871) (AM). Tully Falls, 17.783°S 145.567°E, 900 m, 10 Mar 1956, J.L. Gressitt, Light Trap, 2♂ (00318928, 00318929) (BPBM) Ravenshoe, 23.xii.1964, H.A. Rose (QM) [holotype *S. rosei rosei*]; Windsor Tableland via Mt Carbine, at light, in rainforest, 28.xii.1976, R.I. Storey (DPIQ) [holotype *S. rosei obscurior*].

Sejanus potanini (Reuter)

Sthenarus potanini Reuter, 1906: 77 (n. sp.); Kerzhner, 1988a: 76 (n. comb.); Kerzhner, 1988b: 851 (key); Schuh, 1995: 246 (cat.); Todo and Yasunaga, 1996: 43 (list); Kerzhner and Josifov, 1999: 423 (cat.); Yasunaga, 2001: 121, figs. 1, 2, 7 (diag., descr., disc., biol., DV, MG).

DIAGNOSIS: This species is recognized by its large size, completely dark brown hemelytron, absence of white markings on cuneus, apically golden femora, and C-shaped endosoma with subapical spicules.

DESCRIPTION: See Reuter (1906) and Kerzhner (1988b).

HOSTS: Broad-leafed trees (Betulaceae, Salicaceae).

DISTRIBUTION: Eastern Russia, China, Japan.

DISCUSSION: We were able to examine a series of this species identified by Fedor Konstantiniov from Russia and confirmed the identification based on the male genitalia and large size. Most specimens were later used for molecular data but not associated with USI numbers. One male and one female were retained as vouchers for the series and were affixed with the USI listed in the Specimens Examined section.

HOLOTYPE: **CHINA: Sichuan Prov.:** [Between Matyagi and Taopin], 28 Aug 1853, Potanin, Holotype, 1♀ (00229422) (ZISP) [not examined].

SPECIMENS EXAMINED: **RUSSIAN FEDERATION: Primorsky Terr.:** Lazovsky Nat Res., 06 Aug 2006, F. Konstantinov, 1♂ (00195678) (AMNH). Vostok Bay, 42.87583°N 132.74306°E, 08 Aug 2006, F. Konstantinov, 1♀ (00195682) (AMNH)

Sejanus priscillianus (Distant)

Idiatella priscillianus Distant, 1910: 20 (descr., n. sp.).
Sejanus priscillianus: Carvalho, 1958: 141 (cat.); Schuh, 1984: 180 (diag., descr.).

DIAGNOSIS: Recognized by small size, castaneous coloration, cuneus with two large white spots along anterior margin, yellowish procoxae, trochanters, and pro- and mesofemora, and white antennal segment 1.

DESCRIPTION: See Schuh (1984) for a detailed redescription.

HOSTS: Unknown.

DISTRIBUTION: India, Sri Lanka.

DISCUSSION: Schuh (1984) investigated the type collection of the Natural History Museum, London, and was only able to find one male from West Bengal, not the holotype that was listed as deposited there. Schuh did not designate this specimen as a lectotype (Schuh 1984). We were able to examine several specimens of this taxon from the United States National Museum of Natural History (USNM) identified by J.C.M. Carvalho and images of one specimen of the type series taken by Michael Schwartz. However, we were not able to dissect the male genitalia of the USNM specimens due to their teneral state.

HOLOTYPE: **INDIA: Jharkhand [Bengal]:** Paresnath, 4000–5000 feet, Annandale. 1♂ (BMNH) [not examined].

SPECIMENS EXAMINED: **SRI LANKA: Central Prov.:** Kandy, 7.3016°N 80.6476°E, 498 m, 25 Mar 1971, P. & P. Spangler, 2♂ (00271702, 00271759), 1♂ (00271700) (USNM).

Sejanus serrulatus Schuh
Figure 37

Sejanus serrulatus Schuh, 1984: 181, figs. 500, 600, 607–609 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by castaneous coloration, two white spots on anterior margin of cuneus, hemelytron with short sericeous setae in addition to short, recumbent, simple setae, and serrated dorsal and lateral margins of endosoma with a semicircular secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: *Sejanus serrulatus* is closely related to *S. brittoni* and *S. palumae*, both of which have a serrated membrane on the endosoma that appears almost as a separate lobe on the dorsal surface. However, *S. serrulatus* is easily separated by the much

darker coloration and the presence of the short sericeous setae.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Wau, August 11, 1972, MV light, G.G.E. Scudder. 1♂ (BMNH) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Irian Jaya:** Swart Val. Karubaka, 1550 m, 10 Nov 1958, J.L. Gressitt, Light Trap, paratype, 1♂ (00321151) (BPBM). **Papua:** Bokondini, 40 km N of Baliem Val., 3.88589°S 138.8471°E, 2325 m, 05 Nov 1961–11 Nov 1961, S. Quate & L. Quate, Light Trap, paratype, 1♂ (00321143) (BPBM). **PAPUA NEW GUINEA: Central Province:** Mt. Dayman, Maneau Range, 9.81683°S 149.29001°E, 877 m, 30 Jun 1953–13 Jul 1953, G.M. Tate, paratype, 1♂ (00196413) (AMNH). **East Sepik Province:** Wum, 3.51667°S 142°E, 450 m, 17 Jul 1955, J.L. Gressitt, paratype, 1♂ (00321149) (BPBM). **Madang Province:** Finisterre Range, Saidor: Matoko, 5.25392°S 145.41516°E, 124 m, 29 Aug 1958–05 Sep 1958, W.W. Brandt, paratype, 2♂ (00196411, 00196412) (AMNH). **Morobe Province:** Wau, 7.33333°S 146.71667°E, 14 Aug 1972, G.G.E. Scudder, paratype, 1♂ (00321147) (BPBM); 11 Sep 1972, G.G.E. Scudder, paratype, 1♂ (00321148) (BPBM). Wau, 7.3333°S 146.71667°E, 1100 m, 14 Aug 1972, G.G.E. Scudder, paratype, 1♂ (00095345) (AMNH). **Western Highlands:** Korop, 1300 m, 12 Jul 1955, J.L. Gressitt, Light Trap, paratype, 1♂ (00321150) (BPBM). **Prov. unknown:** Eliptamin Valley, 1980 m, 16 Aug 1959–30 Aug 1959, W.W. Brandt, Light Trap, paratype, 1♂ (00321146) (BPBM); 01 Sep 1959–15 Sep 1959, W.W. Brandt, paratype, 1♂ (00196410) (AMNH). Tsenga, Upper Jimmi Valley, 1200 m, 13 Jul 1955, J.L. Gressitt, Light Trap, paratype, 1♂ (00321145) (BPBM); 14 Jul 1955, J.L. Gressitt, Light Trap, paratype, 1♂ (00321144) (BPBM).

Sejanus sinuosus Schuh
Figure 37

Sejanus sinuosus Schuh, 1984: 182, figs. 500, 610, 622–624 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by completely dark to castaneous coloration with cuneus lacking any white pigmentation, elongate body form with nearly parallel lateral margins, relatively small head and eyes, posterior process of left paramere without sensory pits, and endosoma S-shaped, split into two overlapping straps at apex, and without a visible secondary gonopore.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: *Sejanus sinuosus* is one of the only species of *Sejanus* with an S-shaped, narrow endosoma (Schuh 1984: fig. 622). However, the overall dark coloration, the small size, and the presence of only simple setae, unite this species with the majority of the taxa in this genus.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Mindik, 1200–1600 m, September 1968, N.L.K. Krauss. 1♂ (BMNH) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: East New Britain Province:** Vunabakan, 10 km E. of Keravat., 4.34835°S 152.0956°E, 180 m, 16 Nov 1959–20 Nov 1959, T.C. Maa, paratype, 4♂ (00321099, 00321118–00321120) (BPBM). **Eastern Highlands:** Moife, 6.44437°S 145.48958°E, 2100 m, 07 Oct 1959–14 Oct 1959, T.C. Maa, paratype, 3♂ (00196414–00196416) (AMNH), paratype, 4♂ (00321121–00321124) (BPBM). Moife, 15 km NW of Okapa, 6.43206°S 145.49581°E, 2100 m, 07 Oct 1959–14 Oct 1959, T.C. Maa, paratype, 2♂ (00321116, 00321117) (BPBM). Tapo (Tapu), 3 km NW of Kainantu, 6.233°S 145.833°E, 1650 m, 22 Oct 1959, T.C. Maa, paratype, 1♂ (00095346), paratype, 1♂ (00196417) (AMNH), paratype, 3♂ (00321098, 00321125–00321126) (BPBM).

Sejanus spiculatus Schuh
Figure 37

Sejanus spiculatus Schuh, 1984: 183, figs. 500, 611, 625–627 (diag., descr., disc., n. sp., diag., descr., DV, MG).

DIAGNOSIS: Recognized by pale brown hemelytron with a partial white transverse fascia across majority of clavus posterior to scutellum, two separate white spots on anterior of cuneus, pale colored legs, and presence of two spicules on medial surface of endosoma.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: The presence of a partial transverse fascia in *S. spiculatus* is similar to the condition seen in *S. brittoni* and *S. palumae*, but *S. spiculatus* can easily be distinguished by the presence of the two spicules on the lateral margins of the endosoma and the more strongly convex lateral corial margins.

HOLOTYPE: **PAPUA NEW GUINEA: Western Highlands Prov.:** Taenga, Upper Jimmy Valley, 1200 m, July 14, 1955, J.L. Gressit. 1♂ (BMNH) [not examined].

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: Western Highlands:** Korop, 1300 m, 12 Jul 1955, J.L. Gressitt, Light Trap, paratype, 1♂ (00321153) (BPBM). **Prov. unknown:** Karop, Upper Jimmi, 6.433°S 145.083°E, 1300 m, 12 Jul 1955, J.L. Gressitt, Light Trap, paratype, 1♂ (00095347) (AMNH). Tsenga, Upper Jimmi Valley., 1200 m, 15 Jul 1955, J.L. Gressitt, Light Trap, paratype, 1♂ (00321152) (BPBM).

Sejanus umi Schuh
Figure 37

Sejanus umi Schuh, 1984: 186, figs. 500, 612–621 (diag., descr., disc., n. sp., diag., descr., DV, MG, SEM).

DIAGNOSIS: Recognized by black dorsum and yellowish ventral surface of head, prosternal xyphus, and appendages, lateral surface of eyes parallel to anterior margin of pronotum, relatively flat dorsal surface of hemelytron relative to rest of body, and secondary gonopore reduced to two subapical, lateral processes.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Papua New Guinea.

DISCUSSION: This species is unique in having yellowish coloration on the venter, whereas in all other *Sejanus* species the dorsal and ventral surfaces of the head, pronotum, and thorax are unicolorous dark.

HOLOTYPE: **PAPUA NEW GUINEA: Morobe Prov.:** Umi river, Markham Valley, 480 m, November 23, 1959, L.J. Brass 1♂ (AMNH).

SPECIMENS EXAMINED: **INDONESIA: Papua:** Central Mountains, Archbold Lake, 3.41°S 138.53°E, 760 m, 26 Nov 1961–03 Dec 1961, S. Quate & L. Quate, Light Trap, paratype, 1♂ (00321114) (BPBM). **PAPUA NEW GUINEA: Morobe Province:** No.14, Umi River, Markham Valley, 6.45746°S 146.4-7425°E, 480 m, 17 Nov 1959, L.J. Brass, paratype, 1♂ (00196418) (AMNH); 20 Nov 1959, L.J. Brass, paratype, 1♂ (00196419) (AMNH); 23 Nov 1959, L.J. Brass, 1♂ (00196420) (AMNH). Wau, 7.33333°S 146.71-667°E, 11 Aug 1972, G.G.E. Scudder, Light Trap, paratype, 1♂ (00321113) (BPBM). **Sandaun aka West Sepik Province:** Torricelli Mits, Mokai Village, 3.3667°S 141.9667°E, 750 m, 08 Dec 1958–15 Dec 1958, W.W. Brandt, paratype, 1♂ (00321115) (BPBM). **Western Highlands:** Korop, 1300 m, 12 Jul 1955, J.L. Gressitt, 1♂ (00196423) (AMNH). **Prov. unknown:** Biniguni, Gwariu River, 150 m, 27 Jul 1953–14 Aug 1973, G.M. Tate, paratype, 2♂ (00196421, 00196422) (AMNH). Karop, Upper Jimmi, 6.433°S 145.083°E, 1300 m, 12 Jul 1955, J.L. Gressitt, Light Trap, paratype, 2♂ (00321111, 00321112) (BPBM).

Solomonomimus Schuh
Figure 39

Solomonomimus Schuh, 1984: 221 (n. gen., descr., disc.).

TYPE SPECIES: *Solomonomimus roroni* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by flattened pronotal collar, distinctly shiny head, pronotum, and scutellum, large eyes occupying entire height of head in lateral view, weakly swollen posterior lobe of pronotum weakly convex in lateral view and completely obscuring mesoscutum in dorsal view, finely punctuate, nearly parallel-sided hemelytron, presence of a posterolateral swelling on corium anterior to cuneal fracture forming a lobelike process, posterior area of cuneus darker than remainder of hemelytron, broad and parallel-sided abdomen, and abdominal sternite 1 broader than long.

Female: Unknown.

HOSTS: Unknown.

DISTRIBUTION: Solomon Islands.

DISCUSSION: This genus is very similar externally to *Ctypomiris* due to the weak medial constriction and nearly parallel-sided lateral margins of the hemelytron, the nearly rectangular head (especially *C. kokure*), and the partial transverse hemelytral fascia. However, *Ctypomiris* has a distinctive endosoma with the apex bearing several spinelike

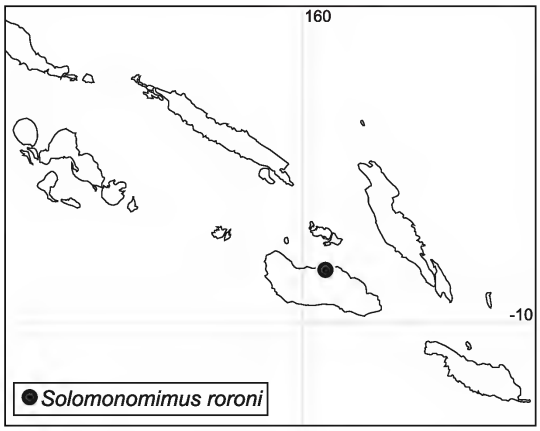

Figure 39. Distribution of *Solomonomimus* sp.

processes, which do not occur in *Solomonomimus*. Further, the clypeus is flush with the frons in lateral view for *Solomonomimus,* whereas in both species of *Ctypomiris* the clypeus extends past the frons in lateral view and is visible dorsally.

Solomonomimus roroni Schuh
Figure 39

Solomonomimus roroni Schuh, 1984: 222, figs. 715, 718, 726, 727 (n. sp., diag., descr., DV, figs. head-pronotum).

DIAGNOSIS: Recognized by characters in generic diagnosis.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Solomon Islands.

DISCUSSION: We were able to examine one paratype of this species; however we did not dissect the male genitalia due to the fragility of the specimen.

HOLOTYPE: **SOLOMON ISLANDS: Guadalcanal:** Roroni, 35 km E. of Honiara, 10 m, 09 May 1964, R. Straatman, Light Trap, 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **SOLOMON ISLANDS: Guadalcanal:** Roroni, 35 km E. of Honiara, 9.45°S 160.23333°E, 10 m, 09 May 1964, R. Straatman, Light Trap, paratype, 1♂ (00318876) (BPBM).

Transleucophoroptera, new genus
Figure 40

TYPE SPECIES: *Leucophoroptera philippinensis* Schuh, 1984.

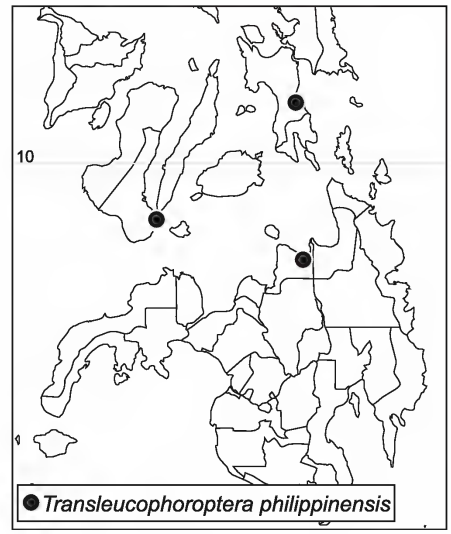

Figure 40. Distribution of *Transleucophoroptera* sp.

DIAGNOSIS: Recognized by lack of pronotal collar; elongate body, dark brown coloration with complete white transverse fascia, white anterior margin of cuneus and dark brown posterior, punctation on apex of clavus and parts of corium, eyes narrow in frontal view but occupying ⅔ height of head in lateral view, posterior margin of eyes partially obscuring anterior margin of pronotum, pronotum relatively narrow compared to width of head with posterior margin nearly equal in width to width of head, dorsally flat pronotum, elongate and round metafemur, and medially constricted hemelytron.

REDESCRIPTION: *Male:* Macropterous, small, lateral margins convex. Total length 2.04, width pronotum 0.69, maximum width across hemelytra 0.74. COLORATION: Dark brown with medially tapering white transverse fascia and white anterior margin of cuneus. **Head:** Dark brown. Eyes deep red to purple. Labium golden. Antennal segment 1 yellow-white, segment 2 basally brown, segments 3 yellow-white basally dark brown distally and 4 completely brown. **Thorax:** Pronotum, scutellum, and thorax pleuron and venter dark brown. *Legs:* Procoxae completely yellow-white, mesocoxae dark brown, and metacoxae yellow-white distally, dark brown basally. Profemora yellow-white, remaining

femora dark brown. Protibia completely yellow-white, mesotibia yellow-white distally, dark brown basally, metatibiae dark brown with extreme base with metafemur narrowly yellow-white. Metatibia with parallel rows of dark spicules. Tarsomeres completely golden. *Hemelytra:* Dark brown, corium and clavus at the level of apex of scutellum with a complete, medially tapering white transverse fascia. Anterior margin of cuneus with white band along anterior margin of cuneus posterior to cuneal fracture taking up half of total area coloration of cuneus, posterior of cuneus unicolorous with majority of hemelytron. Membrane brown without vein pigmentation. **Abdomen:** Dark brown. SURFACE AND VESTITURE: Dorsal surface of body and hemelytron covered with fine, brown simple setae, some recessed at bases in pits (Schuh, 1984: fig 487). Reflective patches along lateromedial margins of corium. STRUCTURE: **Head:** Frons convex, clypeus weakly projecting. Height head greater than width. Vertex convex, strongly declining posteriorly, posterior margin upturned as ridge, width less than width one eye. Eyes weakly removed from dorsal surface of vertex in anterior view, occupying greater than ⅔ total height of head in lateral view, posterior margin of eyes partially obscuring anterior of pronotum. Labium just passing apex of mesocoxae. Antennal segment 2 greater than 1.50 times head width. **Thorax:** Pronotum nearly 1.4 times as long as wide, with lateral margins weakly concave and nearly parallel forming a weak bell shape in dorsal view, dorsal surface flat and lacking demarcation between anterior and posterior lobes, calli not visible, anterolateral angle with single dark, stout spine. Pronotal collar absent. Mesoscutum exposed, scutellum weakly transversely rounded. *Legs:* Long, metafemur 1.25 times longer than pro- and mesofemora, all femora narrow and weakly flattened. *Hemelytra:* Lateral margins concave medially, dorsally nearly flat. Cuneus triangular, approximately ⅓ total length of membrane, cuneal fracture weakly angled anteromesially. **Abdomen:** Nearly parallel sided with narrowing adjacent to attachment to thorax, pygophore ¼ total length of abdomen. GENITALIA: **Pygophore**: Tapering dorsally toward apex, unadorned. **Endosoma:** J-shaped, thin, and weakly twisting at median, small, with weakly developed semicircular subapical secondary gonopore (Schuh, 1984: fig. 493). **Phallotheca**: Surface with ridges on dorsal median surface, weakly L-shaped, apex tapering to point without ornamentations (Schuh, 1984: fig. 495). **Right paramere**: Unknown **Left paramere:** Posterior process elongate, narrow, with sensory pits, apex angled perpendicular relative to main body of paramere; anterior process short, stocky, apex directed in direction of posterior process, dorsal surface of anterior process below midline of total height of paramere (Schuh, 1984: fig. 494).

Female: Unknown.

ETYMOLOGY: From the Latin *trans*, "intermediate," to represent the intermediary body form between the *Ctypomiris* Group and the *Gulacapsus* Group, and *Leucophoroptera* for the genus of original placement of the single included species; feminine.

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands.

DISCUSSION: *Transleucophoroptera* is erected to accommodate the Philippine species *Leucophoroptera philippinensis*, which is not closely related to Australian type species *L. quadrimaculata* (Menard and Woolley, in press). *Transleucophoroptera philippinensis* possesses punctation on the hemelytron and the posterior area of the cuneus is continuous in coloration with the majority of the hemelytron, which differs from all species of *Leucophoroptera* (Menard and Woolley, in press). This taxon is also unique within Leucophoropterini because it possesses the dark brown and white coloration pattern and elongate head of many members of the *Gulacapsus* Group, as well as the hemelytral punctation of most members of the *Ctypomiris* Group. The male genitalia also differ from all other Leucophoropterini, being nearly J-shaped and with a weakly developed semiovoid secondary gonopore that extends basally for ¼ the total length of the endosoma (Schuh, 1984: fig. 493). In almost all other Leucophoropterini the endosoma is clearly C- or S-shaped and the secondary gonopore is either weakly sclerotized, horse-collar shaped, or absent (although see *Sejanus*), and if present never extends very far into the body of the endosoma.

Transleucophoroptera philippinensis (Schuh), new combination
Figure 40

Leucophoroptera philippinensis Schuh, 1984: 146, figs. 475, 478, 480–488, 491–495 (n. sp., diag., descr., DV, figs. head-pronotum, MG, SEM).

DIAGNOSIS: Recognized by the characters in the generic diagnosis.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Philippine Islands, Negros Island.

HOLOTYPE: **PHILIPPINE ISLANDS: Negros Island**: Camp Lookout, Dumaguete, May 20, 1961, T.C. Schneirla and A. Reyes, 1♂ (AMNH).

SPECIMENS EXAMINED: **PHILIPPINES: Angeles City:** Camp Lookout, Dumaguete, Negros Island, 9.3°N 123.3°E, 396 m, 17 May 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00095329) (AMNH). **Leyete:** Abuyog, 35 mi S of Tacloban, 10.75°N 125.0167°E, 09 Jul 1961, P.I. National Museum, paratype, 1♂ (00196077) (AMNH). **Misamis Oriental:** Gingoog, 8.82327°N 125.1024°E, 7 m, 12 May 1961, H.M. Torrevillas, Light Trap, paratype, 1♂ (00318872) (BPBM). **Negros Oriental:** Dumaguete, Camp Lookout, 9.3103°N 123.3081°E, 20 May 1961, T. Schneirla & A. Reyes, 1♂ (00196080), paratype, 1♂ (00196079) (AMNH); 24 May 1961, T. Schneirla & A. Reyes, paratype, 1♂ (00196078) (AMNH).

Trichocephalocapsus Schuh
Figure 41

Trichocephalocapsus Schuh, 1984: 239 (n. gen., diag., descr.).

TYPE SPECIES: *Trichocephalocapsus albofasciatus* Schuh, 1984, by original designation.

DIAGNOSIS: Recognized by large size; weakly necklike area behind eyes with eyes strongly exserted from anterior margin of pronotum, head elongate dorsoventrally with over ½ of total height of head below eyes, elongate flat gula not keellike, long and dark setae on gula and gena, narrow labrum, broad and flat pronotal collar, posterior lobe of pronotum swollen with a convex dorsal surface, white lateral margins of medially constricted hemelytron, and hemelytral membrane pale dark basally, pale distally.

Female: Macropterous, similar to male.

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: This genus is easily identified by the characters in the diagnosis, with the head shape particularly distinctive, the eyes far removed from the anterior margin of the pronotum, the necklike shape of the back of the head, and the long flat gula, characters that are absent from all other genera of Leucophoropterini.

Trichocephalocapsus albofasciatus Schuh
Figure 41

Trichocephalocapsus albofasciatus Schuh, 1984: 243, figs. 785, 786, 788–799 (n. sp., diag., descr., DV, figs. head-pronotum, MG, SEM).

DIAGNOSIS: Recognized by brown to castaneous coloration, basally pale cuneus, male genitalic structure, transverse fascia formed mostly by reflective patches and setae, and pale coloration of distal tarsomeres.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: Western New Guinea [Indonesia].

DISCUSSION: We reexamined the holotype and several paratypes of this species. It is unique based on the characters in the diagnosis and the distinctive hemelytral coloration, as provided in the description and illustrations of Schuh (1984).

HOLOTYPE: **INDONESIA: Irian Jaya:** Swart Val, Karubaka, 1400 m, November 17–21, 1958, J.L. Gressitt. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Irian Jaya:** Cyclops Mountains, Ifar, 2.6°S 140.61°E, 300 m, 21 Jun 1959, T.C. Maa, paratype, 1♂ (00318866) (BPBM). Swart Val.:Karubaka, 3.6°S 138.4667°E, 1450 m, 17 Nov 1958, J.L. Gressitt, paratype, 1♂ (00095348) (AMNH), paratype, 1♂ (00318865) (BPBM). Swart Valley, 3.6°S 138.46667°E, 1400 m, 21 Nov 1958, J.L. Gressitt, paratype, 1♂ (00318863) (BPBM). Swart Valley.: W. Side, 1800 m, 19 Nov 1958, J.L. Gressitt, paratype, 1♂ (00318864) (BPBM). **Papua:** Swart Valley: Karubaka, 3.74417°S 138.32166°E,

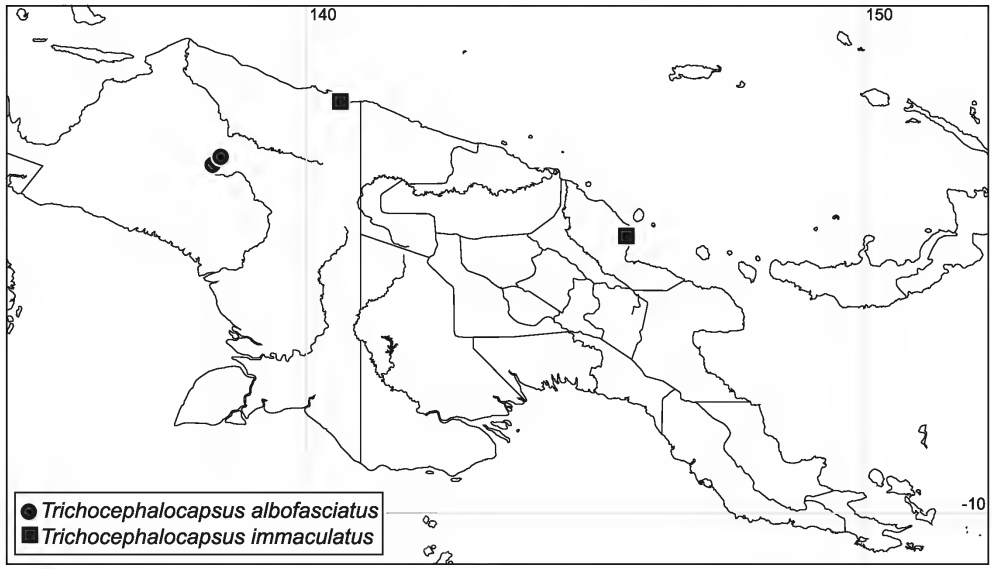

Figure 41. Distribution of *Trichocephalocapsus* spp.

1400 m, 21 Nov 1958, J.L. Gressitt, 1♂ (00196086), paratype, 1♂ (00196085) (AMNH).

Trichocephalocapsus immaculatus Schuh
Figure 41

Trichocephalocapsus immaculatus Schuh, 1984: 244, figs. 785, 787 (n. sp., diag., descr., DV).

DIAGNOSIS: Recognized by yellow-white transverse fascia, unicolorous cuneus, completely dark tibiae, and more strongly elevated posterior lobe of pronotum.

DESCRIPTION: See Schuh (1984).

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: We did not reexamine the holotype of this species, but the original description and illustrations from Schuh (1984) and the examination of one paratype indicate that it is distinct from *T. albisignatus*. Two recently collected female specimens from Papua New Guinea were identified as belonging to this species.

HOLOTYPE: **INDONESIA: Irian Jaya:** Cyclops Mountains, Ifar, 300 m, June 21, 1959, T.C. Maa. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **INDONESIA: Irian Jaya:** Cyclops Mountains, Ifar, 2.6°S 140.61°E, 300 m, 21 Jun 1959, T.C. Maa, paratype, 1♂ (00318866) (BPBM). **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 03 Jul 1996, O. Missa, 1♀ (00302078) (ISNB); 24 Jul 1996, O. Missa, 1♀ (00302079) (ISNB).

Waterhouseana Carvalho
Plate 7, Figures 42–43

Waterhouseana Carvalho, 1973: 4 (n. gen., descr., disc.); Schuh, 1984: 223 (diag.)

TYPE SPECIES: *Waterhouseana illustris* Carvalho, 1973, by original designation.

DIAGNOSIS: Recognized by wide and flat face with gena and gula covered with dense black setae, medially constricted pronotum of hourglass shape in dorsal view, posterior pronotal lobe swollen, convex in lateral view, and completely obscuring mesoscutum in dorsal view, flat pronotal collar, punctate flat hemelytron with a strong medial constriction, lateral posterior margins of hemelytron expanded into a lobelike process anterior and dorsal to cuneal fracture, R+M vein terminating at about midpoint of hemelytron, lateral posterior margin of corium with transparent area, petiolate abdomen with segment 2 longer than wide and paler than remainder of abdomen, dorsal spinelike process on pygophore, and laterally compressed metatibia.

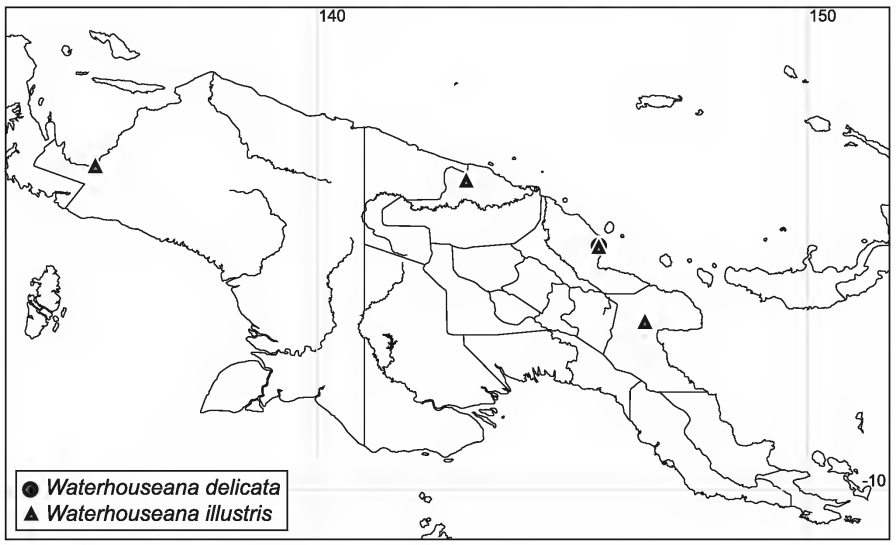

Figure 42. Distribution of *Waterhouseana* spp.

Female: Similar to male but smaller in size, with a wider vertex, anterior margin of eyes continuous with angle of vertex, hemelytra shorter, and antennal segment 2 shorter and more clublike than in male.

HOSTS: Unknown.

DISTRIBUTION: New Guinea.

DISCUSSION: This genus is one of the most bizarre members of the Leucophoropterini and the easiest to identify due to the characteristics of the head and the pronotum. Previously this genus was only known from type species, *W. illustris*; however, recent collecting efforts in Papua New Guinea have uncovered a new species, *W. delicata,* smaller in size than *W. illustris* and lacking the patch of dark brown setae on the hemelytron posterior to the apex of the clavus.

Waterhouseana delicata, new species
Plate 7, Figures 42, 43 A–D

DIAGNOSIS: Recognized by small size, and lack of dark setae on surface of hemelytron posterior to apex of clavus as found in *W. illustris*.

DESCRIPTION: *Male*: Macropterous, small, medially constricted. Total length 2.73–2.77, width pronotum 0.71–0.72, maximum

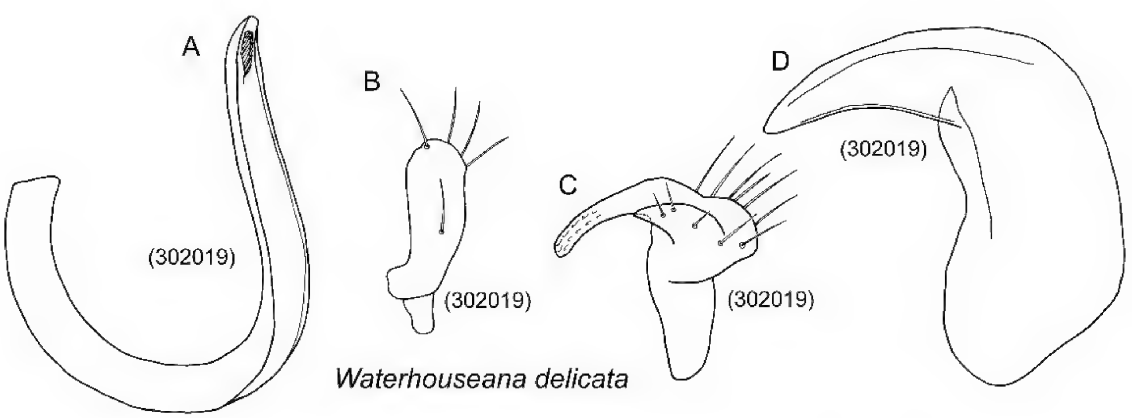

Figure 43. Male genitalia of *Waterhouseana delicata* (A–D).

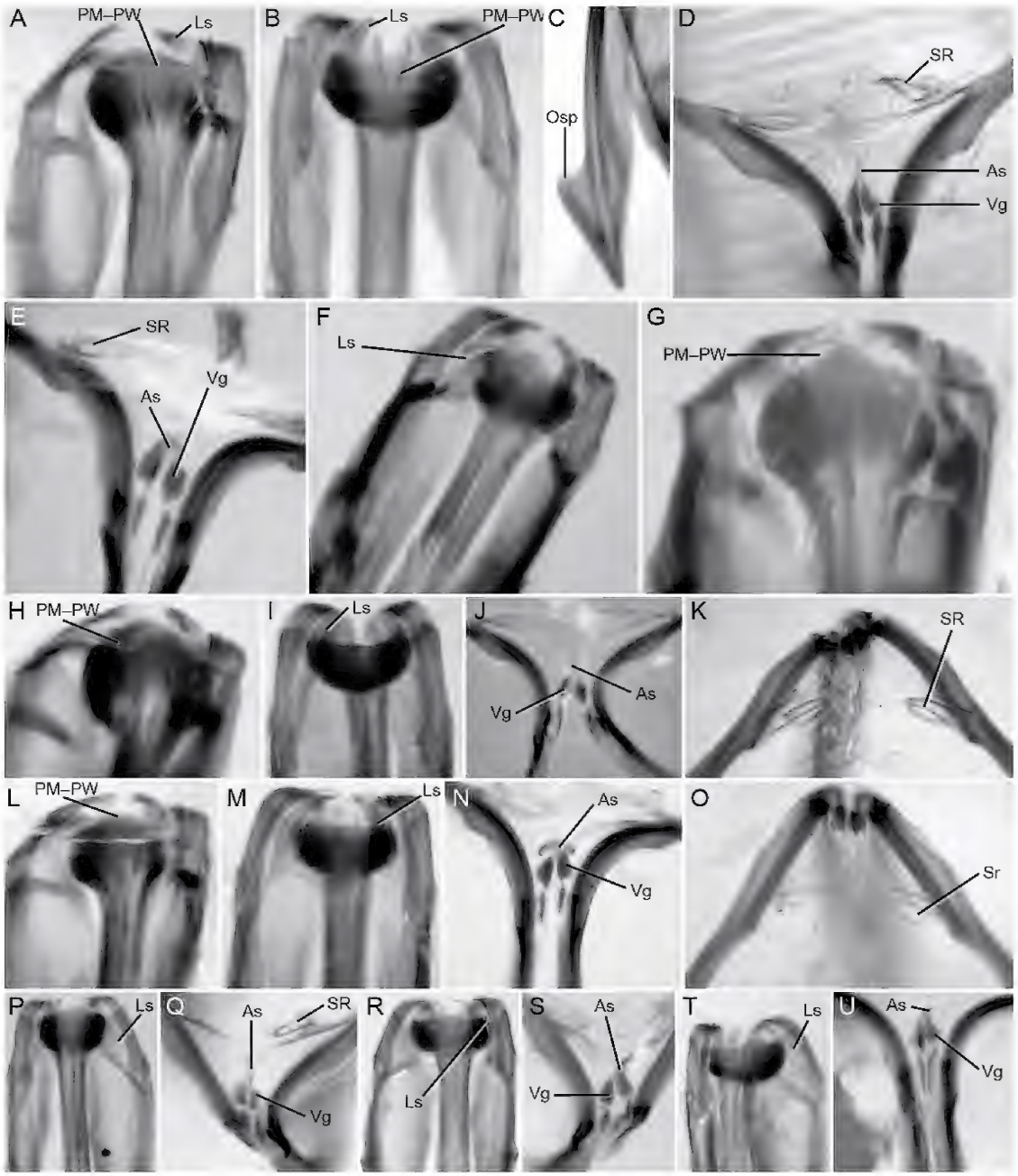

Figure 44. Female genitalia of *Aitkenia exocarpos* (**A–D**), *Arafuramiris queenslandensis* (**E–G**), *Ausejanus albisignatus* (**H–K**), *Austrodapus nitens* (**L–O**), *Blesingia gularis* (**P–Q**), *Collessicoris bellissimus* (**R–S**), and *Leucophoroptera quadrimaculata* (**T–U**). Ls= lateral reduced interramal sclerites; PM–PW= posterior margin sclerite on the posterior wall; Osp= ovipositor spine; SR= sclerotized rings; As = anterior sclerite of first gonapophysis; Vg = vestibular sclerite of first gonapophysis.

width across hemelytra 0.74. COLORATION: Castaneous and dark brown. **Head:** Castaneous. Eyes silver to dark purple. Labium golden. Antennal segment 1 golden ventrally, dark brown anteriorly, segment 2 brown with lightening on medial ⅓, segment 3 golden proximally and dark distally to completely golden, segment 4 brown. **Thorax:** Pronotum, scutellum, and thorax castaneous to dark brown. Dorsolateral margin of metepisternum and scent gland continuous in coloration with thoracic pleura. *Legs:* All coxae pale brown, procoxa sometimes more golden brown. All femora castaneous to brown with ventral surface paler golden, all tibiae basally dark brown to castaneous, distally golden, metatibia with parallel rows of dark spicules and long, obvious golden setae. Basal tarsomeres golden, distally dark brown. *Hemelytra:* Primarily castaneous to dark brown with anterior of corium castaneous to golden brown, clavus castaneous with medial area darker brown, transparent areas on posterolateral margins of corium adjacent to apex of clavus with dark posterior margin that transverses entirety of hemelytron (pl. 7), white patch along medial margin of corium posterior to clavus and anterior part of hemelytral membrane surrounded with dark brown margin, corial margin golden brown medially, dark brown apically. Anterolateral margin of cuneus white for nearly ¼ total area of cuneus, posterior dark brown. Membrane pale brown with veins lacking pigmentation. **Abdomen:** Abdominal sternite 1 yellowish with dark posterior margin, second abdominal sternite white to transparent, remaining segments dark brown. SURFACE AND VESTITURE: Dorsal surface, including eyes covered with long, erect pale brown setae. Head, pronotum and scutellum distinctly shiny. Hemelytron punctate also with erect, black, evenly distributed setae. Reflective patches on clavus and cuneus. Gena and gula with long, dense, black setae. STRUCTURE: **Head:** Wide, flat, lateral margins including eyes obscuring anterior margin of pronotum in lateral view. Clypeus flush with anterior margin of frons in lateral view, not visible in dorsal view. Vertex convex, posterior margin shelflike, width nearly equal to ¾ width of one eye. Dorsal margin of eyes continuous with vertex, height nearly encompassing total height of head, vertex visible in lateral view. Antennal segment 1 inverted-coke-bottle shaped, surpassing apex of head, segment 2 long and equal to in diameter to antennal segment 1, increasing in diameter distally, length segment 2 nearly1.2 times head width, segments 3 and 4 slender and less than half length of segment 2. Labial segment 1 not quite attaining posterior margin of head, apex of labium surpassing apex of procoxa. **Thorax:** Pronotum longer than wide with medial constriction forming an hourglass appearance, posterior lobe swollen and appearing strongly convex in lateral view; pronotal collar narrow and flat. Mesoscutum hidden by posterior margin of pronotum, scutellum swollen anteriorly. Scent gland approximately ¼ total area of metepimeron. *Legs:* Moderate length, slender, metafemur widest subapically and appearing kneelike. Claws of moderate length and width, pulvilli less than half of claw length and small. Parempodia parallel and setiform. *Hemelytra*: Dorsally flat; lateral margin strongly medially constricted, swollen anterior to cuneal fracture forming lobelike process. Cuneus triangular, lateral margin cweakly swollen in area occupied by white pigmentation, mesial margin weakly convex, total length greater than ⅓ total length of hemelytral membrane, cuneal fracture angled anteromesially. **Abdomen:** Narrow anteriorly, widening posteriorly, petiolate. Abdominal sternite 1 longer than wide. GENITALIA (fig. 43): **Pygophore:** Small, with spinelike process on dorsal-posterior margin, occupying about one-fifth length of abdomen, ventral margin weakly sloping upward toward apex. **Endosoma:** Minute, slender, twisted, S-shaped. Secondary gonopore small, horse-collar shaped, located at apex of endosoma (fig. 43A). **Phallotheca:** Small, L-shaped, apex gently tapering toward a point and directed ventrally (fig. 43D). **Right Paramere:** Small, elongate, and parallel sided, nearly equal in size with left paramere, apex rounded (fig. 43B). **Left Paramere:** Small; posterior process slender and strongly curving ventrally, with sensory pits, relatively elongate compared to anterior process; anterior

process stout, dorsal surface nearly reaching to dorsal margin of posterior process; dorsomedial margin convex (fig. 43C).

Female: Unknown.

ETYMOLOGY: Named for its delicate, small size.

HOSTS: Unknown; collected by canopy fogging.

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 22 Jun 1995, O. Missa, 1♂ (00302020) (ISNB).

PARATYPES: **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 12 May 1993, O. Missa, 1♂ (00302021) (ISNB); 1995, O. Missa, 2♂ (00302017, 00302018) (ISNB); 27 Jun 1995, O. Missa, 1♂ (00302022) (ISNB); 26 Apr 1996, O. Missa, 1♂ (00302019) (ISNB).

Waterhouseana illustris Carvalho
Figure 42

Waterhouseana illustris Carvalho, 1973: 5, figs. 8, 9 (n. sp., descr., hab., DV, fig. head); Schuh, 1984: 224, figs. 728–743 (Diag., DV, figs. head-pronotum, MG, hab.).

DIAGNOSIS: Recognized by characters in generic diagnosis, its large size, and patch of dark setae posterior to apex of clavus.

DESCRIPTION: See Carvalho (1973) and Schuh (1984).

HOSTS: Unknown; collected by light traps and canopy fogging.

DISTRIBUTION: New Guinea.

SPECIMENS EXAMINED: **INDONESIA: Irian Jaya:** Nabire, S. Geelvink Bay, 3.3667°S 135.4833°E, 10 m, 14 Sep 1962, H. Holtmann, Light Trap, 1♀ (00318942) (BPBM); 03 Oct 1962, H. Holtmann, 1♂ (00196087) (AMNH). **PAPUA NEW GUINEA: Madang Province:** Baiteta, 5.017°S 145.75°E, 22 Jun 1995, O. Missa, 1♂ (00302130) (ISNB); 06 Jun 1996, O. Missa, Light Trap, 1♂ (00302123) (ISNB). **Morobe Province:** Nadzab, 6.55°S 146.7°E, 129 m, 20 May 1955–22 May 1955, E.O. Wilson, 1♀ (00095360) (AMNH). **West Sepik Province:** Maprik, 150 m, 29 Dec 1959–17 Jan 1960, T.C. Maa, 2♂ (00321074, 00321075) (BPBM). **unknown:** Bainyik, 3.6667°S 143.05°E, 13 Dec 1963, D.K. McAlpine, 1♂ (00393646) (ANIC).

SPECIES INCERTAE SEDIS

Sejanus biniguni Schuh

Sejanus biniguni Schuh, 1984: 157, figs. 499, 504, 508, 517–519 (n. sp., diag., descr., DV, MG).

DISCUSSION: Schuh (1984) stated that he tentatively included several species within *Sejanus* until knowledge of the fauna of the Indo-Pacific matures and acknowledged that they may belong to other lineages despite genitalic and claw characters that are similar to congeners and the Leucophoropterini more broadly. *Sejanus biniguni* from Papua New Guinea is one of those taxa, and based on the results of a subfamily-level analysis (Menard et al., in press) this species has a combination of several characters that make its placement within *Sejanus* and Leucophoropterini problematic. First, the left paramere is unlike any Leucophoropterini, with the posterior process bent down at an angle from the base (Schuh, 1984: fig. 518), whereas all Leucophoropterini have the posterior process straight. Second, while the endosoma is C-shaped with a horse-collar–shaped secondary gonopore, it possesses spicules surrounding the secondary gonopore, while all Leucophoropterini have no elaborations around the secondary gonopore. Lastly, the coloration is unlike *Sejanus, Ausejanus,* and all other Leucophoropterini; *Sejanus biniguni* is primarily yellow with faint red longitudinal stripes on the pronotum and scutellum and has pigmentation in the form of spots on the metafemora and at the bases of the tibial spines (Schuh, 1984), whereas in all Leucophoropterini the head, thorax, and often the appendages are either dark brown or red and have unicolorous metafemoral and metatibial coloration (however, cf. *Sejanus luteoelytratus* for an exception).

DISTRIBUTION: Papua New Guinea.

HOLOTYPE: **PAPUA NEW GUINEA: unknown:** Biniguni, Gwariu River, 150 m, 27 Jul 1953–14 Aug 1973, G.M. Tate, 1♂ (AMNH).

SPECIMENS EXAMINED: **PAPUA NEW GUINEA: unknown:** Biniguni, Gwariu River, 150 m, 27 Jul 1953–14 Aug 1973, G.M. Tate, 1♂ (00196098), paratype, 7♂ (00196091–00196097) (AMNH).

Sejanus fasciatus Carvalho and Gross

Sejanus fasciatus Carvalho and Gross, 1982: 34, figs. 56–58, 114 (n. sp., descr., disc., DV, MG).

DISCUSSION: This species does not belong in Leucophoropterini based on the following characters: the endosoma is not C-, J-, or S-shaped (Carvalho and Gross, 1982: fig. 56), but tubular and twisted like many Hallodapini; antennal segments 2, 3, and 4 are more slender and narrow than antennal segment 1, whereas in Leucophoropterini they are equal to or of greater diameter than antennal segment 1; and the contrasting white of the basal half of the cuneus extends past the fracture and on to the corium, which is present only in *Blesingia promeceops* and *Ausejanus ansevata*, both of which have other characters that clearly place them in Leucophoropterini.

DISTRIBUTION: South Australia, Northern Territory, and Western Australia.

HOLOTYPE: **AUSTRALIA: South Australia:** to light, nr Victory Well, Everard Park Station, 3.xi.1970, G. Gross [sic G. Cross] 1♂ (SAMA).

SPECIMENS EXAMINED: **AUSTRALIA: Northern Territory:** 17 km NNW Alice Springs, 23.55°S 135.83333°E, 08 Nov 1979, G.S. Medvedev, 1♀ (00229523) (ZISP). Katherina River, 14.5°S 132.25°E, 12 Nov 1979–13 Nov 1979, V. Ph. Zaitsev, 2♀ (00229525, 00229526) (ZISP). Katherine River, 25 km NE Katherine, 03 Oct 1977, G.F. Gross & J.A. Forrest, 1♂ (00169071) (SAMA). Tennant Creek, 19.55°S 134.23°E, 10 Oct 1979, G.S. Medvedev, 1♀ (00229524) (ZISP); 10 Nov 1979, Zaitzev, 1♀ (00229522) (ZISP). The Gorge WH. bet. Hatches Creek and Elkedra, 07 Oct 1977, J.A. Forrest, 1♂ (00169072) (SAMA). Yuendumu, 22.258°S 131.797°E, Feb 1968, Unknown, paratype, 1♀ (00169267) (SAMA). **South Australia:** Cadelga Homestead, 26.08949°S 140.4106°E, 150 m, 04 Nov 1998, Schuh, Cassis, Silveira, 2♂ (00195625, 00195626), 1♀ (00195627) *Eucalyptus camaldulensis* Dehnh. (Myrtaceae), 3♀ (00274804–00274806) (AM). near Victory Well, Everard Pk. Stn, 27.054°S 132.506°E, 31 Oct 1970, E. Matthews & G.F. Gross, 1♂ (00169070) (SAMA). **Western Australia:** Palm Springs 38 rd km SE Halls Creek, 18.42305°S 127.84583°E, 11 Jun 1998, J. Oswald, 2♂ (00370669, 00370670) (TAMU).

Sejanus fijiensis Schuh

Sejanus fijiensis Schuh, 1984: 166, figs. 550, 553–555, 561–563 (n. sp., diag., descr., disc., DV, MG, SEM).

DISCUSSION: Schuh (1984) included this species in *Sejanus,* though he stated that it may in fact be an independent linage based on it possessing the following characters inconsistent with other *Sejanus* species and Leucophoropterini in general: the distinctly ovoid body form of the male, whereas all other *Sejanus*, *Ausejanus*, and other Leucophoropterini species have straight to medially constricted lateral margins of the hemelytron; the weak punctation over the entirety of the hemelytron that is absent in all *Sejanus* and *Ausejanus* spp. and present only as strongly punctate in the *Ctypomiris* clade; the relatively large endosoma that, while S-shaped, is far larger than in most Leucophoropterini (Schuh, 1984: fig. 561); and the anterior process of the left paramere splayed out and pointing in a different direction from the posterior process (Schuh, 1984: fig. 562), which is found elsewhere primarily in Pilophorini and the Phylini genera *Decomia* Poppius (e.g., *D. dialeptos* Schuh [1984: fig. 1093]), and *Pseudosthenarus* Poppius (e.g., *P. rozeni* Schuh [1974: fig. 306]) rather than in Leucophoropterini where all members have both processes pointing in the same direction (e.g., *S. funereus* [1984: fig. 565]; however, cf. *S. ecnomios* for one exception). Based on this combination of characters we do not consider *S. fijiensis* a member of *Sejanus* or Leucophoropterini.

HOSTS: Unknown.

DISTRIBUTION: Fiji.

HOLOTYPE: **FIJI: Viti Levu**: Nandarivatu, 3000 feet, September 3, 1938, beating shrubbery, E.C. Zimmerman collector; 1♂ (BPBM).

SPECIMENS EXAMINED: **FIJI: Moala:** Vunuka, 18.60138°S 179.88311°E, 153 m, 23 Aug 1938, E.C. Zimmerman, paratype, 1♀ (00321168) (BPBM). **Ovalau:** Andubangda, 17.69196°S 178.79145°E, 45 m, 15 Aug 1938, E.C. Zimmerman, paratype, 1♀ (00321169) (BPBM). **Vanua Mbalavu:** Bavatu, 16 Aug 1938, E.C. Zimmerman, paratype, 1♀ (00321170) (BPBM). **Viti Levu:** ***Nandarivatu Co.:*** Nandarivatu, 17.56423°S 177.96079°E, 653 m, 02 Sep 1938, E.C. Zimmerman,

paratype, 1♂ (00321167) (BPBM). Rdg W of Vatuthere, Nandarivatu, 17.56423°S 177.96079°E, 653 m, 08 Sep 1938, E.C. Zimmerman, paratype, 1♂ (00321166) (BPBM). **Western Division:** Nandarivatu, Viti Lavu Island, 17.566°S 177.966°E, 670 m, 01 Nov 1938, E.C. Zimmerman, paratype, 1♀ (00095336) (AMNH); 02 Nov 1938, E.C. Zimmerman, paratype, 1♂ (00196114) (AMNH); 03 Nov 1938, E.C. Zimmerman, 1♂ (00095335) (AMNH).

Sejanus hongkong Schuh

Sejanus hongkong Schuh, 1984: 173, figs. 556–560, 571, 573–579 (n. sp., diag., descr., DV, figs. head-pronotum, MG).

Discussion: Schuh (1984) speculated that *Sejanus hongkong* may later be found to be an independent lineage from *Sejanus* once more information was gathered. Based on the results of a subfamily analysis (Menard et al., in press), we believe that the following combination of characters confirm that it is not a member of Leucophoropterini: the left paramere has the anterior and posterior processes of equal length, with the anterior process relatively thick (Schuh, 1984: fig. 578); the overall shape of the left paramere is more similar to many Hallodapini (e.g., *Hallodapus albofasciatus* [Motschulsky]; Schuh, 1984: fig. 385) than Leucophoropterini (e.g., *Sejanus funereus*; Schuh, 1984: fig. 565); the extremely narrow apex of the phallotheca is more similar to members of the *Karoocapsus* group (e.g., *K. middelburgensis;* Schuh, 1974: fig. 204) than most Leucophoropterini with triangular-shaped apices of the phallotheca (*Pseudoleucophoroptera ifar*; Schuh, 1984: fig. 767); the sericeous setae on the dorsum (Schuh, 1984: fig. 571) are not present in any Leucophoropterini with the exception of possibly *Arafuramiris*, which possesses long, thick setae restricted to the clavus and not across the head and pronotum; and the dark spots at the bases of the spines of the metatibiae, which are not present in any Leucophoropterini.

Hosts: Unknown, collected in light traps.

Distribution: China: Hong Kong.

Holotype: **[CHINA]: Hong Kong: N.T.**, Taipokau, September 18, 1965, light trap, Lee Kit Ming and Jui Wai Ming collectors. 1♂ (BPBM).

Specimens Examined: **CHINA: HONG KONG: New Territories:** Castle Peak, 22.39975°N 113.96669°E, 44 m, 06 Aug 1964–13 Aug 1964, W.J. Voss and Wai Ming Hui, paratype, 1♂ (00321142) (BPBM). Tai Po Kau, 22.4333°N 114.1833°E, 222 m, 01 Jun 1964, Lee Kit Ming and Hui Wai Ming, Light Trap, paratype, 1♂ (00196394) (AMNH), Light Trap, paratype, 1♂ (00321129), 1♀ (00321130) (BPBM); 05 Jun 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 2♀ (00196397, 00196399) (AMNH), paratype, 1♂ (00321138) (BPBM); 06 Jun 1964, W.J. Voss and Wai Ming Hui, paratype, 2♂ (00321136, 00321137) (BPBM); 10 Jun 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 1♂ (00321139) (BPBM); 16 Jun 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 1♀ (00095340) (AMNH), Light Trap, paratype, 1♂ (00321140), 1♀ (00321141) (BPBM); 20 Jun 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 1♀ (00196398) (AMNH); 30 Jun 1964, W.J. Voss and Wai Ming Hui, Light Trap, paratype, 1♂ (00196395) (AMNH), paratype, 1♂ (00321128) (BPBM); 02 Jul 1964–06 Jul 1964, Lee Kit Ming and Hui Wai Ming, Light Trap, paratype, 2♂ (00321131, 00321132) (BPBM); 03 Jul 1964–04 Jul 1964, W.J. Voss and Wai Ming Hui, Light Trap, 1♀ (00196400), paratype, 2♂ (00095339, 00196393) (AMNH), Light Trap, paratype, 2♂ (00321133, 00321135), 1♀ (00321134) (BPBM); 01 Sep 1965, Lee Kit Ming and Hui Wai Ming, paratype, 1♂ (00321127) (BPBM); 02 Sep 1965, Lee Kit Ming and Hui Wai Ming, Light Trap, paratype, 1♂ (00196396) (AMNH); 18 Sep 1965, Lee Kit Ming and Hui Wai Ming, Light Trap, paratype, 1♂ (00196392) (AMNH).

Sejanus leai Carvalho and Gross

Sejanus leai Carvalho and Gross, 1982: 26, figs. 34–36, 108 (n. sp., descr., DV, MG).

Discussion: We were able to view images of the holotype and genitalia of this species. The overall dark brown coloration, absence of any white pigmentation along the anterior margin of the cuneus, the lack of a partial or complete transverse fascia, and the relatively large, twisted endosoma with a

spinelike apical process are unlike those of any Leucophoropterini. Although *Ausejanus mcdonaldi* and several species of *Sejanus* are also nearly completely dark brown, they have a small, S- or C-shaped endosoma without an apical spine. If there is an apical spine in Leucophoropterini (e.g., *S. ecnomiscos*), there is some form of white pigmentation on the anterior margin of the cuneus. *Sejanus leai* does not possess either combination of these characters; therefore, we are placing the taxa in incertae sedis until additional characters can confirm its generic or tribal placement.

Sejanus novecaledonicus Schuh

Sejanus novecaledonicus Schuh, 1984: 180, figs., 500, 604–606 (n. sp., diag., descr., DV, MG, host).

DISCUSSION: *Sejanus novecaledonicus* is the most atypical species placed in *Sejanus* by Schuh (1984), and we do not consider it a member of Leucophoropterini based on the following characters: the left paramere has the anterior and posterior process pointing in opposite directions (Schuh, 1984: fig. 605), much more like members of *Decomia* (e.g., *D. microgonoporos* Schuh [1984: fig. 1145]) than *Sejanus* and most other Leucophoropterini; and the completely yellow background coloration with small, scattered, bright red spots, is a condition not present in any other Leucophoropterini that, if unicolorous, are usually dark brown without any spots on the body or metatibiae (e.g., *Sejanus*).

HOSTS: *Casuarina collina* Poiss. ex Pancher and Sebert (Casuarinaceae)

DISTRIBUTION: New Caledonia.

HOLOTYPE: **NEW CALEDONIA**: Ouano Beach, November 13, 1958, C.R. Joyce. 1♂ (BPBM) [not examined].

SPECIMENS EXAMINED: **NEW CALEDONIA: Province Sud:** Nouméa, 22.2667°S 166.45°E, 1 m, Aug 1940, F.X. Williams, *Casuarina collina* (Casuarinaceae), paratype, 1♀ (00321109) (BPBM). Plum, 22.27282°S 166.60867°E, 150 m, 23 Mar 1968–25 Mar 1968, J.L. Gressitt, Light Trap, paratype, 1♀ (00321110) (BPBM).

Sejanus occidentalis Carvalho and Gross

Sejanus occidentalis Carvalho and Gross, 1982: 31, figs. 46–48 (n. sp., descr., disc., MG); Schuh, 1984: 154 (disc. generic placement).

DISCUSSION: Several characters in this taxon suggest that it is not a member of the Leucophoropterini: the endosoma is relatively large, despite the overall body size being equivalent to many *Sejanus* or *Ausejanus* species; the pygophore is also relatively large, half the length of the abdomen; and the apex of the endosoma has multiple spicules and spines (Carvalho and Gross 1982: fig. 46) that are unlike the condition seen in other taxa we place in the Leucophoropterini.

HOSTS: Unknown.

DISTRIBUTION: Western and South Australia.

HOLOTYPE: **AUSTRALIA: Western Australia:** Bunbury, 33.32711°S 115.63699°E, 01 Oct 1958–20 Oct 1958, A Snell, Holotype, 1♂ (00393290) (AM).

SPECIMENS EXAMINED: **AUSTRALIA: South Australia:** Bordertown, 36.43499°S 140.73857°E, 92 m, 22 Oct 1963, J.H. Sedlacek, 1♂ (00318934) (BPBM).**Western Australia:** Bunbury, 33.32711°S 115.63699°E, 01 Oct 1958–20 Oct 1958, A Snell, paratype, 1♂ (00393291) (AM).

Sejanus ruber Carvalho and Gross

Sejanus ruber Carvalho and Gross, 1982: 12, figs. 4–6, 95 (n. sp., descr., DV, MG); Schuh, 1984: 154 (disc. generic placement).

DISCUSSION: Examination of images of the holotype indicated that because of the unique coloration and form of the male genitalia of this species is not a member of the Leucophoropterini. The male genitalia have the following combination of characters: the posterior strap of the endosoma is separated from the anterior strap at the apex, forming a long spine much longer than in any Leucophoropterini; the endosoma is relatively large compared to the small, simplified endosoma of most Leucophoropterini; the secondary gonopore is almost medial (Carvalho and Gross, 1982: fig. 4) rather than subapical; and the left paramere has a medial expansion (Carvalho and Gross, 1982: fig. 45) consistent with the medial expansions of the *Polyozus* group (Weirauch, 2007). The coloration pattern of *Sejanus ruber* is also unique based on the following: the predominant head and thoracic coloration is white, whereas in all *Sejanus* and *Ausejanus* species the head

and thoracic coloration is dark brown or sometimes red (e.g., *S. neboissi*); and the metafemur has several spines with dark pigmented bases, an attribute that is otherwise present only in *S. luteoelytratus*.

HOSTS: Unknown.

DISTRIBUTION: Northeast Queensland.

HOLOTYPE: **AUSTRALIA: Queensland:** Jubilee Rd, 6 km (4 miles) NE of Innisfail, in rainforest at light, 4.xi.1966, E. Britton, 1 ♂ (ANIC).

Sejanus rubricatus Carvalho and Gross

Sejanus rubricatus Carvalho and Gross, 1982: 13, figs. 7–9, 96 (n. sp., descr., DV, MG); Schuh, 1984: 154 (disc. generic placement).

DISCUSSION: We were able to view images of the type in addition to the original description. Based on these observations *Sejanus rubricatus*, like *S. ruber*, has several characters that make its inclusion in the Leucophoropterini problematic: the endosoma is not C-, J-, or S-shaped, but twisted (Carvalho and Gross, 1982: fig. 7); the secondary gonopore is in a medial location like some *Campylomma* spp. (e.g., *C. papuana* Schuh [1984: fig. 1013]); the apex of the endosoma in the original illustration of *S. rubricatus* (Carvalho and Gross, 1982: fig. 7) roughly corresponds to the anterior and posterior blades of *Campylomma* misinterpreted as one structure by the illustrator; and the overall coloration is primarily white to beige for the pronotum, antennae, and thorax, which is consistent with the coloration of most *Campylomma* species, in contrast to the red, dark brown, or pale brown coloration of most Leucophoropterini.

HOSTS: Unknown.

DISTRIBUTION: Queensland.

HOLOTYPE: **AUSTRALIA: Queensland**: Split Rock, 14 km S of Laura, 23–26.vi.1975, G.B. Monteith 1 ♂ (QM) [not examined].

Sejanus trivinosus Carvalho and Gross

Sejanus trivinosus Carvalho and Gross, 1982: 10, fig. 93 (n. sp., descr., DV).

DISCUSSION: This species was described based on one female specimen from Victoria, Australia. We were unable to examine the type specimen because its location is currently unknown, but based on the original description and illustrations of the type we could not with confidence confirm it is a leucophoropterine. In the original description the body and hemelytra are described as being yellowish white to pale brownish, with yellowish-orange markings on the head and dark reddish-orange markings on the mesoscutum, posterior margins of the hemelytra, clavus, and anterior margins of the cuneus (Carvalho and Gross, 1982: fig. 93). This color pattern is more consistent with the Australian *Polyozus* group (Weirauch, 2007: figs. 1–2) than with any *Sejanus* or *Ausejanus* spp., which are almost always mostly dark red, dark brown, or pale brown. Until male specimens are associated with the female holotype, and the genitalia are examined, generic and tribal placement of *S. trivinosus* cannot be confidently addressed.

HOSTS: Unknown.

DISTRIBUTION: Victoria.

HOLOTYPE: **AUSTRALIA: Victoria:** Dartmouth Survey, Six Mile Creek, locality GA, 12.iv.1973, 1 ♀ (MVMA) [not examined].

TAXA REMOVED FROM LEUCOPHOROPTERINI

Dilatops Weirauch

Dilatops Weirauch, 2006: 227 (n. gen., descr., disc.).

DISCUSSION: Weirauch (2006) placed *Dilatops* in the Leucophoropterini based on its similarity to the genus *Lasiolabops* Poppius of Africa and the Indo-Pacific, which also has stylate eyes and feeds on *Ficus* (Moraceae), but noted that it does not have most of the characters considered synapomorphies for the tribe. Weirauch (2006) did suggest that the ridges on the claw could be a synapomorphy with Leucophoropterini (Weirauch, 2006c: fig. 17), but the presence of claw ridges in members of other tribes (e.g., *Pilophorus sp.*, Schuh, 1984: fig. 34) suggests that this is likely not the case. Further, in our analysis of the Phylinae (Menard et al., in press), *Dilatops* is a sister group to the remaining Phylinae excluding the Hallodapini + Auricillocorini rather than a member of Leucophoropterini (Menard et al., in press), and therefore is moved to the Phylini pending revision of the tribal classification.

Karoocapsus Schuh

Karoocapsus Schuh, 1974: 123 (n. gen., descr., disc., key to spp.).

DISCUSSION: *Karoocapsus* Schuh was one of the first genera assigned to the Leucophoropterini based on the shared synapomorphies of a relatively small pygophore, and simple male genitalia (Schuh 1974). However, based on an analysis of the subfamily, *Karoocapsus* groups with *Tytthus* Poppius and several genera usually assigned to the Phylini, a grouping that is more closely related to the Pilophorini than Leucophoropterini (Menard et al., in press). Therefore, *Karoocapsus* is transferred from the Leucophoropterini to the Phylini.

Lasiolabops Poppius

Lasiolabops Poppius, 1914: 26 (n. gen.); Carvalho, 1958: 53 (cat.); Schuh, 1984: 137 (diag., disc.).

DISCUSSION: *Lasiolabops* was originally described from Africa as a monotypic genus (*L. obscurus* Poppius, type species). It was placed in the Phylini by Carvalho (1958). Schuh (1984) described three new species of *Lasiolabops* from New Guinea and Southeast Asia (*L. kokoda*, *L. cosmopolites*, and *L. irianicus*), which share scalelike setae (Schuh, 1984: figs. 463–466) and stalked eyes (ibid: fig. 461) with *L. obscurus*. Schuh moved *Lasiolabops* into Leucophoropterini because the Indo-Pacific species of *Lasiolabops* grouped with the leucophoropterine genera in his phylogenetic analysis (Schuh, 1984). Potential synapomorphies uniting *Lasiolabops* with Leucophoropterini are a relatively small genital capsule, a C- to J-shaped endosoma, and a weakly sclerotized secondary gonopore (Schuh, 1984). However, these characters are also present in *Dilatops* (Weirauch, 2006) (see discussion above). We are also moving *Lasiolabops* out of the Leucophoropterini and back into a broadly conceived Phylini because the phylogenetic analysis of Menard et al. (in press) does not place *Lasiolabops* in the Leucophoropterini as conceived here.

Myrmicopsella Poppius

Myrmicopsella Poppius, 1914: 37 (n. gen.); Schuh, 1974: 36 (disc. of tribal placement).

DISCUSSION: *Myrmicopsella,* a monotypic genus based on a female holotype from Madagascar (*M. nitidipenne* Poppius), was placed in Leucophoropterini by Schuh (1974) due to the similarity of its ant-mimicking habitus to that of other taxa that he placed in the group. Schuh (1984) also stated that *Myrmicopsella* looked most similar to *Karoocapsus* from Southern Africa, which we have determined is not a leucophoropterine (Menard et al., in press). Based an image of the holotype, the hemelytral membrane appears to be broken off; nonetheless, the hemelytron in the female conforms to the shape of the abdomen and is not nearly so reduced in length as in *Karoocapsus* spp. (e.g., *K. middelburgensis* Schuh; Menard, 2010: fig. 4F). In all female Leucophoropterini the posterior margin of the hemelytron at least reaches the posterior margin of the abdomen and the hemelytra lay flat over the abdomen, in contrast to the situation seen in *Myrmicopsella*. Based on the apparent relationship of *Myrmicopsella* to *Karoocapsus*, which is no longer in Leucophoropterini, we are placing *Myrmicopsella* in a broadly conceived Phylini. The ultimate resolution of placement of Myrmicopsella will likely require the association of male specimens with the female holotype of *M. nitidipenne* (see also discussion below under *Schuhistes* Menard).

Porophoroptera Carvalho and Gross

Porophoroptera Carvalho and Gross, 1982: 51 (n. gen., descr., disc.).

DISCUSSION: The monotypic genus *Porophoroptera* (*P. elegans* Carvalho and Gross, type species) was described from Australia by Carvalho and Gross (1982), and placed in the *Leucophoroptera* Group (Leucophoropterini) based on it being putatively ant mimetic. The overall habitus and coloration of *Porophoroptera* are similar to many of the genera included in Leucophoropterini, but there are several unique abdominal and genitalic features that suggest that it does not belong to the tribe. First, the endosoma is flat and box shaped (Carvalho and Gross, 1982: fig. 82) rather than elongate or tubular. Second, the pygophore is relatively large compared with those in the Leucophoropterini, at least ⅓ the total length of the abdomen. For these

reasons it is unlikely that *Porophoroptera* belongs to the Leucophoropterini and it is therefore tentatively placed in the Phylini. We would also note that in *Porophoroptera* both males and females have small, white sclerotized structures extending dorsally from the dorsolateral margins of the second abdominal sternites, which have thus far not been found in any other Miridae species.

Schuhistes Menard

Schuhistes Menard, 2010: 49 (n. gen.).

DISCUSSION: *Schuhistes* Menard was placed in the Leucophoropterini based on its superficial similarity to *Karoocapsus* and its relatively small, simple endosoma and genital capsule. However, unlike all Leucophoropterini, *Schuhistes* has relatively large pulvilli that nearly encompass the length of the underside of the claw (Menard, 2010: fig. 3b), and brachypterous, rounded wings in females that barely cover the apex of the abdomen (Menard, 2010: fig. 1). Leucophoropterini have pulvilli that only partially cover the ventral surface of the claw, and females have complete wings that extend past the apex of the abdomen. With the pending removal of *Karoocapsus* from the Leucophoropterini, as well as it grouping with several other South African taxa in the Phylini not closely related to the Leucophoropterini on the basis of morphological and molecular data (Menard et al., in press), *Schuhistes* is temporarily placed in the Phylini pending placement with other South African taxa in a new tribe.

Tytthus Fieber

Tytthus Fieber, 1864: 82 (n. gen.).

DISCUSSION: *Tytthus* Fieber was placed in the Leucophoropterini by Schuh (1974) based on the shared synapomorphies of a relatively small pygophore and simple male genitalia. However, based on a phylogenetic analysis of the subfamily, *Tytthus* instead falls in a separate lineage with *Karoocapsus* Poppius and several other Phylini genera (Menard et al., in press). *Tytthus* is therefore moved out of the Leucophoropterini and into a broadly conceived Phylini.

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REFERENCES

Carpenter, J.M. 1988. Choosing among multiple equally parsimonious cladograms. Cladistics 4: 291–296.

Carvalho, J.C.M. 1952. On the major classification of the Miridae (Hemiptera), with keys to subfamilies and tribes and a catalogue of the world genera. Anais da Academia Brasileira de Ciências 24 (1): 28–102.

Carvalho, J.C.M. 1958. A catalogue of the Miridae of the world: Part II. Arquivos do Museu Nacional, Rio de Janeiro, 45: 216 pp.

Carvalho, J.C.M. 1973. On some interesting new genera and species of Miridae from Oceania (Hemiptera). Revista Brasileira de Biologia, suppl. 33: 1–9.

Carvalho, J.C.M. 1980. Analecta Miridologica, IV: observations on type specimens in the National Museum of Natural History, Budapest, Hungary (Hemiptera, Miridae). Revista Brasileira de Biologia 40: 649–658.

Carvalho, J.C.M., and G.F. Gross. 1982. Australian ant-mimetic Miridae Hemiptera: Heteroptera). I. The Leucophoroptera group of the subfamily Phylinae. Australian Journal of Zoology Suppl. Ser. 86: 1–75.

Cassis, G., and C. Weirauch. 2008. A new species and first record of *Dilatops* Weirauch (Insecta: Heteroptera: Miridae: Phylinae) from New Caledonia. Memoirs of the Queensland Museum 52: 119–122.

China, W.E. 1926. Synonymic notes on Hemiptera. Entomologist 59: 227–228.

Distant, W.L. 1910. Descriptions of Oriental Capsidae. Annals and Magazine of Natural History (8) 5: 10–22.

Eyles, A.C., and R.T. Schuh. 2003. Revision of New Zealand Bryocorinae and Phylinae Insecta: Hemiptera: Miridae). New Zealand Journal of Zoology 30: 263–3.

Farris, J.S. 1969. A successive approximations approach to character weighting. Systematic Zoology 18: 374–84.

Fieber, F.X. 1864. Neuere Entdeckungen in europäischen Hemipteren. Wiener entomologische Monatschrift 8: 65–86, 205–236, 321–336.

Goloboff, P., Farris, J., and Nixon, K. 2003. T.N.T.: Tree Analysis Using New Technology [program and documentation portal]. Available online (www.zmuc.dk/public/phylogeny).

Goloboff, P.A. 1993. Estimating character weights during tree search. Cladistics 7: 215–232.

Kerzhner, I.M. 1988a. New and little known heteropterous insects from the Soviet Far East [book]: 83 pp. Akademija Nauk SSR, Vladivostok. [In Russian]

Kerzhner, I.M. 1988b. Miridae (Capsidae). Keys to the insects from the Soviet Far East, 2: 778–857. Nauka, Leningrad. [In Russian]

Kerzhner, I.M., and R.T. Schuh. 1995. Homonymy, synonymy, and new combinations in the Miridae (Heteroptera). American Museum Novitates 3137: 1–11.

Kerzhner, I.M., and M. Josifov. 1999. Miridae Hahn. 1833. *In* B. Aukema and C. Rieger (editors). Catalogue of the Heteroptera of the Palearctic Region. Vol. 3, Cimicomorpha II, 576 pp. The Netherlands Entomological Society, Amsterdam.

Knight, H.H. 1938. *Idatiella* China: two new species with a key (Hemiptera, Miridae). Annals and Magazine of Natural History 1: 25–27.

McGiver, J.D., and G. Stonedahl. 1993. Myrmecomorphy: Morphological and behavioral mimicry of ants. Annual Review of Entomology 38: 351–379.

Menard, K.L. 2010. Description of *Schuhistes* n. gen. (Heteroptera: Miridae: Phylinae), a new plant bug genus found on endemic *Lycium* spp. (Solanaceae) from South Africa. Entomologica Americana 116 (1/2): 49–57.

Menard, K., and J.B. Woolley, J. In press. A phylogenetic study of the generic relationships within Leucophoropterini Schuh (Heteroptera: Miridae: Phylinae).

Menard, K., R.T. Schuh, and J.B. Woolley. In press. Phylogenetic analysis of Phylini using morphological and molecular data, with a revised classfication of the subfamily.

Nicholas, A., P.W. Martin, and F. MacDonald. 2007. New prey records of the predatory native

Miridae *Sejanus albisignatus* and *Romna nigrovenosa* (Hemiptera). The Weta 34: 24–26.

Poppius, B. 1914. Die Miriden der Äthiopischen Region II: Macrolophinae, Heterotominae, Phylinae. Acta Societatis Scientiarum Fennicae 44 (3): 136 pp.

Poppius, B. 1915. H. Sauter's Formosa-Ausbeute: Nabidae, Anthocoridae, Termatophylidae, Miridae, Isometopidae und Ceratocombidae (Hemiptera). Archiv fur Naturgeschichte 80A (8): 1–80.

Poppius, B. 1921. Fam. Miridae, pp. 32–65. *In* Poppius, B. and E. Bergroth (editor). Beiträge zur Kenntnis der myrmecoiden Heteropteren. Annales Historico-Naturales Musei Nationalis Hungarici 18: 31–88, 2 pls.

Reuter, O.M. 1906. Capside in Prov. Sz'tschwan Chinae a DD. G. Potanin et M. Beresowski collectae. Extrait de l'Annuaire du Musée zoologique de l'Académie Impériale des Sciences de St. Pétersbourg 9: 1–81.

Schuh, R.T. 1974. The Orthotylinae and Phylinae (Hemiptera: Miridae) of South Africa with a phylogenetic analysis of the ant-mimetic tribes of the two subfamilies for the world. Entomologica Americana 47: 1–332.

Schuh, R.T. 1984. Revision of the Phylinae (Hemiptera, Miridae) of the Indo-Pacific. Bulletin of the American Museum of Natural History 177 (1): 1–476.

Schuh, R.T. 1995. Plant bugs of the world (Insecta: Heteroptera: Miridae): Systematic catalog, distributions, host list and bibliography. New York Entomological Society, 1329 pp.

Schuh, R.T. 2004. Revision of *Tuxedo* Schuh (Hemiptera: Miridae: Phylinae). American Museum Novitates 3435: 1–26.

Schuh, R.T. 2008–2011. On-line systematic catalog of plant bugs (Insecta: Heteroptera: Miridae), v 2.2. Available online (http://research.amnh.org/pbi/catalog/).

Schwartz, M. 2011. Revision and phylogenetic analysis of the North American genus *Slaterocoris* Wagner with new synonymy, the description of five new species and a new genus from Mexico, and a review of the genus *Scalponotatus* Kelton (Heteroptera: Miridae: Orthotylinae). Bulletin of the American Museum of Natural History 354: 1–290.

Steyskal, G.C. 1973. The grammar of names in the catalogue of the Miridae (Heteroptera) of the world by Carvalho, 1957–1960. Studia Entomologica 16: 203–208.

Todo, Y., and T. Yasunaga. 1996. The plant bugs collected on willow (*Salix* spp.) in Hokkaido, Japan. Rostria 45: 41–47.

Wearing, H.C., and B. Attfield. 2002. Phenology of the predatory bugs *Orius vivinus* (Heteroptera: Anthocoridae) and *Sejanus albisignatus* (Heteroptera: Miridae) in Otago, New Zealand, apple orchards. Biological Control Science and Technology 12 (4): 481–492.

Weirauch, C. 2006. New genus and species of fig-inhabiting Leucophoropterini (Heteroptera: Miridae: Phylinae) from Australia. Russian Entomology Journal 15 (2): 227–232.

Weirauch, C. 2007. Revision and cladistic analysis of the *Polyozus* group of Australian Phylini (Heteroptera: Miridae: Phylinae). American Museum Novitates 3590: 1–60.

Yasunaga, T. 2001. A review of the phyline plant bug genus *Sejanus* Distant in Japan (Heteroptera: Miridae: Phylinae) with descriptions of three new species. Entomological Science 4: 121–126.